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PROCEEDINGS
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CONNECTICUT
STATE MEDICAL SOCIETY

1910

118th ANNUAL CONVENTION

HELD AT

NEW HAVEN, MAY 25th and 26th

EDITOR

WALTER R. STEINER

ASSISTANTS

FREDERICK B. WILLARD

CHARLES J. BARTLETT

PUBLISHED BY THE SOCIETY

The Connecticut State Medical Society does not hold itself responsible for the opinions contained in any article unless such opinions are indorsed by special vote. All communications intended for the Connecticut State Medical Society should be addressed to Walter R. Steiner, M.D., Hartford, Conn.

The next annual meeting of the Connecticut State Medical Society will be held in Hartford, May 24th and 25th, 1911.

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OFFICERS OF THE SOCIETY.

1910-1911.

President.

FRANK K. HALLOCK, Cromwell.

Vice Presidents.

EDMUND P. DOUGLASS, Groton.

EDWARD T. BRADSTREET, Meriden.

Secretary.

WALTER R. STEINER, Hartford.

Treasurer.

JOSEPH H. TOWNSEND, New Haven.

COMMITTEES.

STANDING COMMITTEES.

COMMITTEE ON SCIENTIFIC WORK.

Phineas H. Ingalls. John E. Loveland.
The Secretary.

COMMITTEE ON MEDICAL EXAMINATION AND MEDICAL EDUCATION.

Horace S. Fuller. Walter L. Barber.
J. Francis Calef. Charles A. Tuttle.
Samuel M. Garlick.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

Everett J. McKnight. Elias Pratt.
Charles J. Foote. Charles C. Gildersleeve.
Leone F. LaPierre. Charles E. Stanley.
Frederick M. Wilson. Eli P. Flint.
The President. The Secretary.

COMMITTEE ON HONORARY MEMBERS AND DEGREES.

Seldom B. Overlock. D. Chester Brown.
Irwin B. Grannis.

SPECIAL COMMITTEES.

COMMITTEE ON A COLONY FOR EPILEPTICS IN THE STATE.

Max Mailhouse. Edwin A. Down.
Allen R. Diefendorf. Frank K. Hallock.
The President.

COMMITTEE ON NATIONAL LEGISLATION.

Everett J. McKnight.

DELEGATES.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

Everett J. McKnight.

D. Chester Brown.

DELEGATES TO STATE ASSOCIATIONS.

MAINE.

S. M. Garlick, Bridgeport.

O. T. Osborne, New Haven.

NEW HAMPSHIRE.

S. B. Overlock, Pomfret.

E. H. Welch, Winsted.

VERMONT.

F. B. Willard, Hartford.

C. J. Bartlett, New Haven.

MASSACHUSETTS.

C. E. Taft, Hartford.

C. B. Graves, New London.

RHODE ISLAND.

C. E. Brayton, Stonington.

T. F. Rockwell, Rockville.

NEW YORK.

H. Blodget, Bridgeport.

W. H. Carmalt, New Haven.

NEW JERSEY.

C. C. Gildersleeve, E. Woodstock.

J. H. Mountain, Middletown.

PENNSYLVANIA.

E. P. Swasey, New Britain.

E. J. McKnight, Hartford.

HOUSE OF DELEGATES.

COUNCILORS.

HARTFORD COUNTY.
OLIVER C. SMITH.

NEW HAVEN COUNTY.
CHARLES S. RODMAN.
WILLIAM H. CARMALT (councilor-elect).

NEW LONDON COUNTY.
EDWARD P. BREWER.

FAIRFIELD COUNTY.
GOULD A. SHELTON.
SAMUEL M. GARLICK (councilor-elect).

WINDHAM COUNTY.
JOHN B. KENT.

LITCHFIELD COUNTY.
EDWARD H. WELCH.
ELIAS PRATT (councilor-elect).

MIDDLESEX COUNTY.
JAMES M. KENISTON.

TOLLAND COUNTY.
THOMAS F. ROCKWELL (re-elected).

DELEGATES.

HARTFORD COUNTY.

Frederick B. Willard.	Charles M. Wooster.
Erastus P. Swasey.	Myron P. Robinson.
Michael H. Gill.	Thomas G. Sloan.
John H. Rose.	

NEW HAVEN COUNTY.

William S. Russell.	James L. Moriarty.
Jeremiah D. Eggleston.	Louis H. Wilmot.
Ralph A. McDonnell.	Charles A. Monagan.
Charles J. Bartlett.	

NEW LONDON COUNTY.

Dennis J. Shahan.	Leone F. LaPierre.
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FAIRFIELD COUNTY.

James D. Gold.	William B. Cogswell.
William J. Tracey.	Frederick C. Graves.
Jesse M. Coburn.	

WINDHAM COUNTY.

Robert C. White.	Seldom B. Overlock.
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LITCHFIELD COUNTY.

William S. Hulbert.	Charles I. Page.
---------------------	------------------

MIDDLESEX COUNTY.

Charles B. Young.	George N. Lawson.
-------------------	-------------------

TOLLAND COUNTY.

Frank L. Smith.

STANDING COMMITTEES.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

Everett J. McKnight.	Elias Pratt.
Charles J. Foote.	Charles C. Gildersleeve.
Leone F. LaPierre.	Charles E. Stanley.
Frederick M. Wilson.	Eli P. Flint.
The President.	The Secretary.

COMMITTEE ON MEDICAL EXAMINATIONS AND MEDICAL EDUCATION.

Horace S. Fuller.	Walter L. Barber.
J. Francis Calef.	Charles A. Tuttle.
Samuel M. Garlick.	

COMMITTEE ON SCIENTIFIC WORK.

George Blumer.	John W. Wright.
The Secretary.	

COMMITTEE ON HONORARY MEMBERS AND DEGREES.

Edmund P. Douglass. Phineas H. Ingalls.
William S. Hulbert.

COMMITTEE OF ARRANGEMENTS.

Otto G. Ramsay. Charles J. Foote.
Raynham Townshend.

SPECIAL COMMITTEES.

COMMITTEE ON A COLONY FOR EPILEPTICS IN THE STATE.

Max Mailhouse. Edwin A. Down.
Allen R. Diefendorf. Frank K. Hallock.
The President.

COMMITTEE ON NATIONAL LEGISLATION.

Everett J. McKnight.

MINUTES OF THE HOUSE OF DELEGATES.

The first meeting of the House of Delegates was called to order on Wednesday, May 25, at 10 o'clock, at the New Haven Medical Society rooms, Young Men's Christian Association Building, 152 Temple Street, New Haven, by the President, Dr. Samuel D. Gilbert of New Haven. There were present Dr. Oliver C. Smith, Dr. Charles S. Rodman, Dr. Gould A. Shelton, Dr. John B. Kent, Dr. Elias Pratt, Dr. James M. Keniston and Dr. Thomas F. Rockwell (councilors), Dr. Frederick B. Willard, Dr. Thomas G. Sloan, Dr. Jeremiah D. Eggleston, Dr. Ralph A. McDonnell, Dr. James L. Moriarty, Dr. Charles A. Monagan, Dr. Charles J. Bartlett, Dr. James D. Gold, Dr. William J. Tracey, Dr. Frederick C. Graves, Dr. Jesse M. Coburn, Dr. Robert C. White, Dr. Seldom B. Overlock, Dr. Charles I. Page, Dr. George N. Lawson and Dr. Frank L. Smith (delegates), the President, Dr. Samuel D. Gilbert, and the Secretary, Dr. Walter R. Steiner. The following reports were then read and accepted:

(1) Report of the Secretary, Dr. Walter R. Steiner (Hartford):

REPORT OF THE SECRETARY.

Mr. President and Gentlemen of the House of Delegates:

During the past year we have had prepared, in accordance with Chapter VI, Section 4, of our By-Laws, a card index of all the members of the Society. By its use we hope the State Secretary may better keep up with the changes in our membership, for the suspended members can now be so listed in it. When they become regular again, by the payment of their back dues, they can be readily transferred into the alphabetical list. Consequently, we trust the county secretaries will keep the State Secretary informed, by postal cards, so that the

delinquents may be properly classified as regular members again, when they have paid up.

During the year we have also had prepared a card index of those physicians in this State who are not members of this Society, and have sent a list of them in the various counties to the county secretaries, so that these secretaries may be able to obtain for membership in our Society the eligible and desirable physicians in such lists. This non-affiliated physicians index may be kept up-to-date by the coöperation of the county secretaries. It was prepared from the Directory of Physicians which was published by the American Medical Association in the early part of this year. From its study we learn that there are one thousand four hundred and twenty-four physicians in Connecticut, of whom five hundred and sixty-six are not affiliated with us. Of this number, one hundred and twenty-two are homeopaths and thirty-six eclectics, so that, if these sects stick to their creeds, there remain four hundred and eight doctors who are non-affiliated. Of course some of these would be undesirable as members, but, I am confident, a few at least would be found in this group who would make desirable accessions.

Our membership, including the twenty-one honorary members, shows an increase of six over that of last year, making our total number now eight hundred and sixty-nine. The Fairfield County Association has added the most new members, the number being thirteen. New Haven comes next with twelve, Hartford follows with eleven, Litchfield with four, New London with three and Windham with two. The names of the new members in the County Association, with graduation and places of residence, we give below. They number forty-five in all.

Henry Bickford, Eclectic Med. Col., 1868, Hartford.

Paul Waterman, Cornell, 1898, Hartford.

William Bradford Bartlett, Harvard, 1906, Hartford.

Howard Buckley Haylett, Vermont, 1907, Hartford.

Domenico DeBonis, Naples, 1890, Hartford.

Jeremiah Everett McSweeney, Vermont, 1891, Hartford.

John Carter Rowley, Harvard, 1906, Hartford.
Richard Joseph Dwyer, Jefferson, 1908, Hartford.
Edward James Whalen, Yale, 1908, Hartford.
George William Eddy, Vermont, 1904, Collinsville.
Thomas Grant Alcorn, Columbia, 1896, Thompsonville.
Frederick George Beck, Yale, 1903, New Haven.
Henry Kingsley Hine, Md. Med. Col., 1908, Waterbury.
Raynham Townshend, P. & S., N. Y., 1905, New Haven.
Joseph Lee Gilmore, Yale, 1904, West Haven.
John Wagner Ives, Yale, 1900, Milford.
Jeremiah Joseph Cohane, Yale, 1898, New Haven.
Frank Atwater Elmes, Yale, 1905, Derby.
Frank Lyman Phillips, Yale, 1906, New Haven.
Charles Fitzgerald, Vermont, 1898, New Haven.
James Aloysius Grady, Georgetown Univ., 1903, Waterbury.
Charles Edwin Sanford, Yale, 1906, New Haven.
John Aloysius Murphy, New York Univ., 1897, New Haven.
Frank Martin Dunn, Balt. Med. Col., 1908, New London.
James Green Burr, Balt. Med. Col., 1893, Baltic.
Robert R. Agnew, Yale, 1908, Jewett City.
William Harvey Stowe, Yale, 1888, South Norwalk.
William Hanford Allee, P. & S., N. Y., 1899, Ridgefield.
Ralph William Crane, Yale, 1905, Stamford.
William Truitt Godfrey, Yale, 1907, Stamford.
Albert Edward Belisle, Jefferson, 1908, Bridgeport.
George Walter Hawley, Cornell, 1899, Bridgeport.
Charles B. Keeler, Hahn., Chicago, 1888, New Canaan.
Charles Levi Ditcher, Maryland, 1905, Stamford.
Walter Louis Scofield, Vermont, 1907, Stamford.
Edward Williamson, Bellevue, 1886, Stamford.
Samuel Martin Shirk, Hahn., Phila., 1891, Stamford.
Sarah Elizabeth Finch, Cornell, 1894, Sound Beach.
DeRuyter Howland, P. & S., N. Y., 1906, Stratford.
Joseph Napoleon Perriault, Tufts, 1907, Danielson.
Francis Downing, Baltimore Med. Col., 1908, Moosup.
James Hugh Kane, Maryland Med. Col., 1904, Thomaston.
Benjamin Earle Bostwick, L. I. Col. Hosp., 1890, New Milford.
Nelson L. Deming, P. & S., N. Y., 1893, Litchfield.
Charles Henry Turkington, Johns Hopkins, 1907, Litchfield.

The largest gain in the County Associations is seen in Fairfield, with a net gain of six; Hartford follows with three; Windham and Litchfield with two each; New London with

one; New Haven presents a loss of five, Tolland of two, and Middlesex of one. We have lost during the year fifty-eight members, distributed as follows: By death, twelve; by removal, twenty-one; by suspension, twenty; by expulsion, four; by resignation, one. Our total number is distributed among the counties as follows:

Membership	County Associations	New Members	Reinstatement	By Transfer	Deceased	Removed	Resigned	Suspended	Expelled	Gain in Membership	Loss in Membership
227	Hartford County....	11	0	0	6	2	0	0	0	3	0
227	New Haven County.	12	13	1	2	10	1	15	3	0	5
62	New London County	3	0	1	2	0	0	0	0	1	0
169	Fairfield County....	13	0	0	2	3	0	5	0	6	0
41	Windham County...	2	0	0	0	1	0	0	0	2	0
60	Litchfield County...	4	0	0	0	4	0	0	1	2	0
42	Middlesex County...	0	0	0	0	1	0	0	0	0	1
20	Tolland County.....	0	0	0	0	0	0	0	0	0	2
848		45	13	2	12	21	1	20	4	14	8

Death has removed one ex-President during the year—Dr. Samuel B. St. John, who was known far beyond the confines of this State. His buoyant spirit, his devotion to duty and his sterling, upright life will leave an imprint behind him in the memory of his friends and be an example, we trust, to coming generations of physicians in Connecticut. Death has, also, claimed another member, Dr. John P. C. Foster, who was, probably, not so well known, but whose work to combat the great white plague in Connecticut was second to none. He was taken away when the State sorely needed his continued excellent supervision of the Tuberculosis Commission. Fortunately his idea of county homes for the consumptive, which the Commission was putting into execution, and the stamp he put upon that Commission's work, as well as his prominence in the National Association for the Study and Prevention of Tuberculosis, will cause his name to be honored

and long remembered by all in this State, who are interested in the struggle to wipe out this preventable disease.

The committee to solicit money for the James J. Carroll Fund, composed of Dr. W. H. Carmalt, New Haven, Dr. James M. Keniston, Middletown, and the Secretary, was informed of the completion of the fund at the onset of its labors in June, 1909.

The semi-annual meetings, in the fall, continue to be a success. The meeting at Bridgeport was well attended. The proceedings of our Society have appeared, as during the year previous, in the *Yale Medical Journal* and were also published in book form, both of which the members still receive, as per agreement.

Respectfully submitted,

WALTER R. STEINER.

(2) Report of the President, Dr. Samuel D. Gilbert (New Haven):

REPORT OF THE PRESIDENT.

Gentlemen of the House of Delegates:

The business of the Society devolves on you, and I would emphasize the remarks of my predecessor with reference to the responsibility which all delegates should feel as to their duty in attending all the sessions of this body. No man should accept the appointment merely as a personal compliment, but should realize that its acceptance means responsibility and work.

As to medical progress and work in the State. The commissions to carry out the work of the sterilization act have been appointed, and able and wise men have been selected from our Society for the positions. The tuberculosis sanatoriums provided by the State are nearing completion, one practically finished. The death of Dr. Foster, Chairman of the Tuberculosis Commission, occurring at this time was a public calamity; but I believe his work will be ably carried on, and the important object of caring for tuberculosis patients success-

fully brought to perfection by Dr. Knight and the Commission. I have visited all the County Associations at least once and have found it an inspiration, and I believe the visits of the President of the State Society promotes interest by the county members in the state organization. The County Associations are the feeders of the State Society and give strength to it, if their members are regular in attendance and interested. The attendance is, on the whole, good, and the papers of high quality. The holding of an autumn meeting of the State Society jointly with one of the County Associations is a comparatively new thing and a step in the right direction. The meeting at Bridgeport in October was largely attended. The symposium on alcohol brought out three valuable papers by men from other counties than Fairfield; and other able papers were read by members of the Fairfield County Association. Altogether, the meeting was a great success. I hope that such joint meetings in the near future will be as valuable as this was. They strengthen both county and state societies.

I am able to report increasing interest throughout the State in the affairs of the Society. I have received a letter from Dr. Henry O. Marcy, Chairman of the Davis Memorial Committee, in which he urges our Society to contribute generously toward this object. It is doubtful if we, as a Society, could respond to his wish, but individuals may be disposed to give.

I would recommend that the House of Delegates pass resolutions supporting the action taken by the House of Delegates of the American Medical Association at the Atlantic City session in 1909, with reference to amendments to the National Food and Drugs Act. The medical societies of New York and Pennsylvania have already passed such resolutions. The importance of food without preservatives of any kind is so evident that every effort should be brought to bear on Congress to prevent their use. The Committee on Legislation, through Dr. McKnight, member of the National Legislative Council for our State, will have, very likely, something to say on this subject.

(3) Report of the Chairman of the Council, Dr. Oliver C. Smith (Hartford):

REPORT OF THE CHAIRMAN OF THE COUNCIL.

Mr. President and Gentlemen of the House of Delegates:

Three meetings of the Board of Councilors have been held during the year just completed. The first meeting was held at the Hunt Memorial Building immediately after adjournment of the annual meeting of the Connecticut State Medical Society. Organization of the board was effected at this time and various matters pertaining to the welfare of the Society informally discussed. Dr. Walter R. Steiner was appointed Editor of the Transactions, and Drs. Charles J. Bartlett and Frederick B. Willard assistant editors. Dr. Charles S. Rodman and Dr. Gould A. Shelton were appointed the Auditing Committee, and Dr. Oliver C. Smith was elected Chairman.

The second meeting was held March 16, 1910, at the Hartford Club. The status of suspended members was discussed, the board deciding that such should not be considered as members nor receive the Transactions. The salary of the Secretary was carefully considered, and while the board unanimously felt that it should be increased, the present state of our treasury—there being at present a deficit—induced us to postpone such action. It was voted, however, that in addition to the \$150.00 salary which he now receives, any extra expense, such as employing of stenographer and the preparation of the card indices, should be rendered in the form of a bill and paid for by the Society.

The matter of continuing our subscription to the *Yale Medical Journal* was discussed, it being evident that we could not continue the present arrangement without increasing our income or practicing some economy. It was suggested to the board that members could return their copies of the *Yale Medical Journal* to the publishers and with the addition of the Transactions these could be bound and returned to the subscriber, thereby saving much duplication of printing, and resulting in an estimated economy to the Society of \$800 per annum. It was the unanimous feeling of the board that our arrangement with the *Yale Medical Journal* should continue; the decision as to means was carried over until the third meet-

ing of the board, when it is customary for previous votes and recommendations to be ratified.

Tentative nominations for the offices of the Society for the coming year were made.

The third meeting was held May 18 at the Hartford Club. The Chairman of the Committee on Public Policy and Legislation, Dr. E. J. McKnight, was present by invitation and reported that the Board of Councilors was instructed by vote at the spring meeting of Hartford County Medical Association to recommend to the House of Delegates at their annual meeting postponing the enforcement of the by-law relating to contract practice until January 1, 1911, and to instruct the Secretary to forward to each member of the Society a copy of the said by-law and the action taken by the House of Delegates at said meeting. It was further explained that such action seemed desirable, as a number of the thirteen who are still doing contract practice were not aware of the by-law, and others had become aware of it after their contracts were made.

After careful consideration your board decided to advise an increase in the annual dues of \$1.50, viz., from \$3.00 to \$4.50. This will increase our income approximately \$1,200.00 and we believe will enable us to continue the present satisfactory arrangement with the *Yale Medical Journal*, besides adding something each year to our surplus.

The following communication from the editors and managers of the *Yale Medical Journal* explains itself:

NEW HAVEN, CONN., April 9, 1910.

To the Councilors of the Connecticut State Medical Society:

Gentlemen:—As you will recall, the contract for the printing of the Proceedings of the Connecticut State Medical Society by the *Yale Medical Journal*, made in the spring of 1908, was for a period of three years and will accordingly terminate in the spring of 1911. If the present arrangement of printing the Proceedings, or some modification of it, is to continue beyond that period, it seems desirable that action should be taken at the Annual Meeting of the State Medical Society this spring to that effect. The Annual Meeting of 1911 comes at the very end of the contract period, and we feel that it is essential for us as editors of the *Yale Medical Journal* to know before that time

whether the *Journal* is to continue to print the Proceedings in order that our plans may be made accordingly for our printing contracts, our advertisements and other matters for which it requires some time to arrange.

At the same time we would call your attention to one part of the subject which requires consideration. We refer to the increased cost of printing. Since our contract was made with you, the cost of printing has increased from fifteen to twenty-five per cent. This has not worked any hardship on us as our printers accepted the view that the price given us upon which we based our three-year contract with the Connecticut State Medical Society should continue during the life of the contract. On the other hand, these terms cannot continue beyond that period, and further our printers are now in no position to give a price for printing the *Journal* and Proceedings for a term of years. This is because of the unsettled condition of the labor market.

In view of this, it would seem advisable to us, and we would suggest, that the House of Delegates at the meeting in May of this year delegate to the Councilors, or to some other appropriate committee, power to make annual contracts with the *Yale Medical Journal* for the printing of the Proceedings. This would provide for a renewal of contract each year on equable terms, and would give either party to the contract the option to discontinue the arrangement at the end of any annual contract period.

As the members of the Connecticut State Medical Society are interested in the character of the journal which represents both that Society and the Yale Medical School, we would call attention to the fact that not a single advertisement is carried which is not strictly ethical, and that all of the income of the *Journal* from all sources is used for producing the best possible magazine. No one connected with the *Journal* derives any financial benefit from such connection.

Very truly yours,

W. H. CARMALT,
HERBERT E. SMITH,
GEORGE BLUMER,
C. J. BARTLETT.

Your board advises that a contract with the *Yale Medical Journal* should be made for a term of years, the terms of contract to be fixed by the Council and a committee from the *Journal* each year.

At this meeting the board voted to bring before the House of Delegates and recommend the passage of a law to be pre-

pared by Dr. James M. Keniston, providing for the registration of all defectives and degenerates, after a certain date.

The board would call the attention of the House of Delegates to the importance of a more uniform system of reporting to the State Secretary the census of the various County Associations. In some counties suspended members have been continued on the rolls and in other counties the names have been dropped. As the representation in the House of Delegates is based upon the numerical strength of each County Association an accurate census is important.

The total expense for 1909 for the publication of Transactions and the *Yale Medical Journal* is \$2,500. Of the 1,000 volumes of the Transactions, 869 volumes have been delivered, and there are 131 on hand.

The Auditing Committee, Dr. Charles S. Rodman and Dr. Gould A. Shelton, has examined the Treasurer's accounts and found them correct. The balance of funds on hand is \$167.15. The amount of taxes due and uncollected is \$429.00, as compared with \$393.00 in 1908. We are indebted to the *Yale Medical Journal* to the amount of \$416.00, so that there is a deficit of \$246.00.

The Board of Councilors, acting as your Nominating Committee, present the following nominations:

NOMINATIONS.

President.

FRANK K. HALLOCK, *Cromwell.*

Vice Presidents.

EDMUND P. DOUGLASS, *Groton.*

EDWARD T. BRADSTREET, *Meriden.*

Secretary.

WALTER R. STEINER, *Hartford.*

Treasurer.

JOSEPH H. TOWNSEND, *New Haven.*

Committee on Scientific Work.

P. H. Ingalls, Hartford. J. E. Loveland, Middletown.
The Secretary.

Committee on Medical Examinations and Medical Education.

Charles A. Tuttle, New Haven.

Committee on Public Policy and Legislation.

E. J. McKnight, Hartford. C. C. Gildersleeve,
C. J. Foote, New Haven. East Woodstock.
L. F. LaPierre, Norwich. C. E. Stanley, Middletown.
F. M. Wilson, Bridgeport. E. P. Flint, Rockville.
Elias Pratt, Torrington.

Committee on Honorary Members and Degrees.

S. B. Overlock, Pomfret. D. Chester Brown, Danbury.
Irwin B. Grannis, Saybrook.

Delegates to the American Medical Association.

D. Chester Brown. E. J. McKnight.

Delegates to State Associations.

Maine.

S. M. Garlick, Bridgeport. O. T. Osborne, New Haven.

New Hampshire.

S. B. Overlock, Pomfret. E. H. Welch, Winsted.

Vermont.

F. B. Willard, Hartford. C. J. Bartlett, New Haven.

Massachusetts.

C. E. Taft, Hartford. C. B. Graves, New London.

Rhode Island.

C. E. Brayton, Stonington. T. F. Rockwell, Rockville.

New York.

Henry Blodget, Bridgeport. W. H. Carmalt, New Haven.

New Jersey.

C. C. Gildersleeve, J. T. Mountain, Middletown.
East Woodstock.

Pennsylvania.

E. P. Swasey, New Britain. E. J. McKnight, Hartford.

The Chairman wishes to express his deep appreciation for the universal courtesy and forbearance extended him by members of the Board of Councilors.

Respectfully submitted,

OLIVER C. SMITH.

(4) Reports of the Councilors from the different counties in the State:

¹ REPORTS OF THE COUNCILORS.

(a) Hartford County, by Dr. Oliver C. Smith:

Mr. President and Gentlemen of the House of Delegates:

The members of the Hartford County Medical Association extend their greetings, and through their Councilor beg leave to submit the following report.

The Association has suffered loss by death of six members. Dr. Newton Stephen Bell was born in 1838, and graduated at the University of Burlington, Medical Department, in 1864; practiced medicine in Blanford until 1870, when he removed to Windsor, Conn., where he continued actively engaged in practice until the time of his death, April 11, 1910. Dr. Bell's life during these forty-seven years of general medical practice was devoted with unusual singleness of purpose to his professional work. To a large community in and about Windsor he was the "beloved physician," and his loss came as a personal affliction to his many patients and friends. A man of large and robust physique, of sterling character, of excellent judgment, with rich experience and a tender heart, he fulfilled his mission in life with skill and devotion.

Dr. Luther Augustus Davison of Hartford, Conn., was born in 1849, and graduated at the New York Medical College in 1892. He entered practice the same year and became a member of the State Medical Society the following year. He died November 1, 1909, after a short illness. Dr. Davison was engaged in general practice, his patients were fond of him, and he had a wide circle of friends.

Dr. Homer Lycurgus Law was born in 1847. He graduated from Jefferson Medical College, Philadelphia, in 1869, and served as Naval Surgeon in the United States Navy for a long period with honorable record. He was stationed at Hartford as recruiting officer and joined the Hartford County Medical Association in 1895. Although not engaged in active practice of medicine, he maintained a keen interest in the welfare of the local profession and as Chairman of the House Committee of the Hartford Medical Society his services were unique and greatly appreciated.

Dr. Matthew Turner Newton was born in 1833, graduated from the Medical Department of Yale University in 1851, became a member of the Hartford County Medical Association the following year, and continued in practice until within a short time before his death, which occurred July 22, 1909. Dr. Newton was a conscientious practitioner, he acquired a wide reputation and served a long and useful lifetime in the practice of his profession.

Dr. Philo W. Street was born in 1864, and graduated from the Medical Department of the University of Vermont in 1892. Dr. Street was actively engaged in practice until 1905. He was a conscientious, progressive practitioner and one who gave his patients much careful thought. He had read acceptable papers before the County Association. He died September 13, 1909.

Dr. Samuel Benedict St. John was born in 1845, and graduated from the Columbia University College of Physicians and Surgeons in 1870. Dr. St. John practiced in New York from the time of his graduation until coming to Hartford in 1877, with the exception of one year which he spent in Europe. He

enjoyed thirty-four years of extensive practice in his specialty, that of otology and ophthalmology. His career was brilliant and distinguished. He had been President of the Hartford Medical Society, the Hartford County Medical Association and the Connecticut State Society. He was President of the New York Ophthalmological Society in 1891, of the New England Ophthalmological Society in 1896, for a number of years Secretary of the American Ophthalmological Society, and finally in 1909 its President, being the American representative to the International Congress of Ophthalmologists held at Naples, Italy, in 1908. He died suddenly, December 21, 1909. The Hartford County Medical Association points to Dr. St. John's career with just pride and deeply mourns his loss.

Two members of the Hartford County Medical Association have removed to other states, none have been dropped or suspended, eleven members have been elected during the year, six at the fall meeting and five at the spring meeting, giving us a present membership of two hundred and twenty-seven, a gain of three over the past year, entitling us to a representation of seven members in the House of Delegates.

The attendance at our spring meeting was eighty-nine, at the fall meeting ninety-three, an average attendance of ninety-one, being the largest average attendance in the history of the Association.

The papers have been of marked interest and the discussions animated. A portion of the programme at the spring meeting was devoted to clinical reports, the names of the men reporting cases appearing on the programme. This proved an interesting and profitable feature.

In relation to contract medical work in Hartford County, it must be admitted that a few are still engaged in this practice. It is evident from our discussions upon the subject that the majority heartily disapprove of this work and it is hoped that all such contracts will be terminated in the near future.

The Hartford and St. Francis Hospitals at Hartford have enjoyed a more marked growth during the past year than ever before. Their staffs have been enlarged, new departments

created, and their general efficiency increased. The New Britain General Hospital, the third hospital in the county, shows by its last report a wholesome growth in efficiency and in numbers of patients. Ground has been broken for a spacious modern operating-room.

While the Councilor has been consulted by members concerning matters of interest to the Association, there has been no occasion for him to act as Censor, the affairs of the Association being unusually harmonious. The large attendance at our meetings and the success of the scientific programmes are in no little degree due to the painstaking and efficient administration of our President, Dr. Charles D. Alton, and our Secretary, Dr. Frederick B. Willard.

Respectfully submitted,

OLIVER C. SMITH.

(b) New Haven County, by Dr. Charles S. Rodman:

Mr. President and Gentlemen of the House of Delegates:

Briefly reporting a year ago from New Haven County, references were made to our statistics and membership, to the scientific work, to the social features of our meetings, to the increased attendance due to interest in matters of business and choice of officers and to our necrology. To begin at the stopping point; of two of our recent members, Dr. Foster and Dr. Shepard, the one so honored within and without the State, the other so esteemed by those who knew him, so much has been well said, that seeing the procession pass on to the unknown, one is led to say—not cynically but regretfully—our death rate is unchanged.

Two meetings of our Association were held during the year, both in Waterbury. The attendance in April was about seventy, in October eighty, which compare with over one hundred in Meriden the year before. In April, 1909, it was in the air that one of our members might be made President of the Society. In April, 1910, the same number of delegates was elected as the year before; only eight were nominated. The

day on which this our last meeting was held was fine. The manufacturers of Waterbury placed their superb club at our disposal. After adjournment a dinner was served of unusual excellence, enlivened with music and song. Interest in the business and in the choice of officers is more potent in drawing our men together than dinners. At both of the meetings of the year the papers submitted evidenced careful preparation and the after discussion was unusually general and able. In addition to our President, our guest at both, in October, Dr. Simpson and Dr. Randall from Hartford and Fairfield counties honored us by their presence, Dr. Swain and Dr. Goodenough reported as our delegates to Hartford and Middlesex; at the recent April meeting we were fortunate in having with us

STATEMENT OF COMPONENT COUNTY ASSOCIATIONS

From the Reports of the Secretary and Treasurer of the Society May 26, 1909.	Membership, 1909	No. Annual Taxes Paid*	Receipts	Arrears	No. in Arrears, Tax of 1908
Hartford County	224	175	\$472.50	\$117	39
New Haven County	232	251	677.70	213	71
New London County	61	55	148.50	....	...
Fairfield County	163	168 $\frac{2}{3}$	455.40	33	11
Windham County	39	37	99.90	12	4
Litchfield County	58	64	172.80	12	4
Middlesex County	43	40	108.00	....	...
Tolland County	22	18	48.60	6	2
	842	808 $\frac{2}{3}$	\$2,183.40	\$393	131

The compilation suggests problems confronting those who study the Society's Reports. New Haven County, with 232 members (229 taxable), paid 251 annual taxes; 71 in arrears on tax of 1908 leave 158 as credited with its payment, 93 taxes being then on previous years. In Hartford County, with 224 members, if every dollar is credited to tax of 1908, 175 paid it; in arrears are 39, a total of 214, and unaccounted for are 10 members, a number in excess of that known to your auditors as exempt.

* The amount of a member's annual tax as received by the Treasurer is \$2.70, 10 per cent. being retained by the County Association.

ex-President Higgins, the Secretary, Dr. Steiner, and Dr. Cogswell from Fairfield County. The regrettable incident of the meeting was the resignation of two of our older members.

Representation in the House of Delegates is based upon the enumeration of the members of the County Associations. Therefore, there should be uniformity in the method of computation. In the last published report of the Secretary, fifteen or sixteen members of New Haven County Association are stated to be suspended, as in arrears. No member of any other county is so reported as suspended. The Treasurer, however, compiles the arrears on tax of 1908 as nearly \$400.00, distributed among six counties. A comparison of our membership with receipts acknowledged may be of interest.

As but five members of the Hartford County Association are starred in the last volume of our Proceedings as tax exempt, it appears that an equal number were elected in April, 1909, and added to the list upon which representation is based—members, however, who failed to qualify by payment of dues until after the levy of the next annual tax, that of May, 1909.

This custom seems to be followed in every county; our officers who compile the data received from the county secretary are in no way responsible for it. But it is inconsistent to suspend old members when they neglect to pay their annual tax and to base representation on new ones before they have paid anything to the society.

The work that is assigned to a secretary of some of the counties is too great to devolve on one member. The example of Fairfield, which elects both a secretary and treasurer, is to be commended.

The printing of the Proceedings of 1908, as shown in the last printed report of the Treasurer, cost \$2,250.00, rather more than the total receipts of the Society. The volume of 1908 contains 360 pages, that of 1909, 449, and the bill for the last will be exhibited shortly.

In 1899-1900 your Councilor had the honor to serve on the Publication Committee of the Society. It may be of interest

to quote from the committee's report (Proceedings of 1900, page 28). The volume referred to, that of 1899, was of 418 pages and from the report of the Treasurer the cost was \$684.81.

"The constitution of the Committee and the time of their service made it possible for them to determine in advance what papers should appear in the Proceedings. Many of them were in hand and in type before the meeting was held and as a consequence the Proceedings were ready for issue within the first week in July—about six weeks from the time of holding the meeting. Seven hundred and seventy-five copies of the book were printed."—N. E. WORDIN, *Secretary*.

Permit me to recommend for my own county, at least, the keeping of a registration book at the meetings for the names of members and others in attendance, and the separation of the duties of a secretary from those of a treasurer.

In the making of the minutes of a meeting the Secretary should not be interrupted by the acceptance of the overdue taxes of members or the belated applicants for dinner tickets, the sale of which is not an accurate gauge of the attendance.

Respectfully submitted,

C. S. RODMAN.

(c) New London County, Dr. Edward P. Brewer. Read by the Secretary in the absence of Dr. Brewer:

Mr. President and Gentlemen of the House of Delegates:

The professional relations of the members of the New London County Medical Association continue cordial. The two meetings have been well attended, the papers excellent, and the discussions vigorous. A growing spirit of tolerance and liberality is abroad, especially toward practitioners who are not eligible to a membership in our Association; a disposition to respect sincere work and honest difference of opinion. This has found expression in the local society in Norwich. By a change in the by-laws any legally qualified physician in good standing may now become a member.

Two active and influential members have died in the past year, Dr. Lewis S. Paddock and Dr. George R. Harris, both of Norwich.

Dr. Paddock through his long and successful career lived to high ideals. Strictly honest with himself, he was ever fearless, true and kind to his confrères. Religious by nature, believing unfalteringly in the goodness of the human heart and the ultimate dominance of virtue, he uplifted and strengthened his brother practitioners and his patrons.

Dr. Harris viewed life from another vantage point. He looked out through rich red blood and found life joyous and beautiful. The unkind was more apparent than real, so that he had small need to forgive. Good cheer and good-fellowship, frankness and fairness were his chief attributes and made him an associate greatly loved by all.

With deep sorrow we report the loss, a disaster alike to the profession and the public.

Respectfully submitted,

EDWARD P. BREWER.

(d) Fairfield County, by Dr. Gould A. Shelton:

Mr. President and Gentlemen of the House of Delegates:

In the year now closing the Councilor of Fairfield County is pleased to report a period of professional activity and friendly concord, two elements in the Association's life which have relieved the work of the Councilor and enabled him to record a very satisfactory progress.

Our membership is of conservative growth, with much outside material which could well be received into the Association. Drafting into service, however, is not always desirable. The expressed wish of the applicant to ally himself with the better part of the profession, carries with it an obligation to assist in advancing the work of the Association.

Twelve men, good and true, have been added to our membership during the year, giving us a very satisfactory increase, when compared with that of last year.

The five local associations, serving as medical gardens, and located in the more populous portions of the county, have no troublesome parasites to hinder their healthful growth. The younger and newer plants show everywhere a lusty advancement, while the older and well-rooted ones are still in their bloom and in their fruitage.

While these local institutions have an individuality of their own, they surely keep alive the medical spirit of to-day by their more frequent meetings, and build unconsciously the more permanent structure of the County Association.

Our annual and semiannual meetings have been largely attended, and made most interesting and instructive through able and practical papers, contributed by our own members, as also by a number of well-known workers in their special fields of labor.

The one marked event of our Association year has been the coming of the State Society into our mid-year meeting. It was all and more than we had anticipated. We invested our best and heartiest welcome, and received in dividends the happy and courteous presence of our knightly guests.

The usual scientific work of our mid-year meeting was strongly reinforced by the able members of the State Society, and the strength of this united good-fellowship will be felt in the years of the near future.

This annual visitation in the mid-year, so recently adopted, must necessarily be helpful to the County Associations, and we of Fairfield must record ourselves as strongly advocating a continuance of this plan on the part of the State Society.

The hospital work of our county has kept pace with this hurrying age. While the larger hospitals are providing well for the populous centers, the smaller ones are doing a work of commendable zeal and usefulness. The new hospital at Danbury has now been completed, and through its zealous workers has fully entered upon its mission. The coming of a beautiful and well-equipped hospital in Stamford, I am informed, is an assured fact, through the noble munificence of one of her generous citizens, and thus another name added to the world's benefactors.

Fairfield County has never lost sight of its pressing need for a tuberculosis sanatorium within her borders. Favorable sites in many parts of the county have been searched out, each presenting its own peculiar fitness. One selection of promising worth, a year ago, early in the year lost the witchery of its charms, and faded away in the forgotten shadows of the day. Still hope had not gone when our State, ever ready to enter into humanitarian work—a work for the highest welfare of its people—appropriated a munificent sum for erecting and maintaining sanatoriums in the several counties of Connecticut. It is only the beginning of the State's work, yet the earnestness of the Tuberculosis Commission, and its well-tempered energies, have materialized for us the long-looked-for sanatorium.

Its location in a very picturesque part of our county is easily accessible by both steam and electric rail. Its southern and eastern exposure on the hills one and a half miles from Shelton gives it an inviting air, while from its highest point, an elevation of 350 feet, the four open buildings for incipient cases command a far-reaching view, embracing miles of the winding Housatonic River and vast stretches of Long Island Sound—a view, I believe, unequaled in our State. Surely the fates reserved this health-giving spot for their part in this great work of to-day.

While this sanatorium is located on the eastern border of the county, it holds an easy approach from every part of southwestern Connecticut. In this work we are assured that, in the year now closing, humanitarian medicine of Fairfield County has added largely to its assets.

In the culmination of this work of the lamented Doctor Foster, he has left an enduring monument, which for many years to come will tell the pathetic story of a life work devoted to the upbuilding of a cause destined to free the world of its greatest scourge. In the army of able and self-sacrificing workers, Doctor Foster will ever hold an eminent and well-merited position.

As far as the Councilor has been able to ascertain, the publication of the Proceedings of the State Medical Society in the

Yale Medical Journal, with the bound volume following, has been acceptable to the membership in our county.

This innovation is along the line of that of the American Medical Association, through its *Journal*, and would seem to bring to our State its current medical literature in a very acceptable way.

In this year's shifting scenes, only two of our members will be missed from before the footlights. Holmes and Tiffany have rendered their last rôles, have been called to file away their records, and to lay down their life work. Their devotion to duty and loyalty to their chosen profession have called forth merited acclaim, and the reward for true Christian fidelity will be theirs.

Respectfully submitted,

GOULD A. SHELTON.

(e) Windham County, by Dr. John B. Kent:

Mr. President and Gentlemen of the House of Delegates:

No events of special medical interest have occurred in Windham County during the past year.

I think our members are coming to appreciate more and more the importance of keeping in closer touch with our County Association. This seems to be apparent by the increased attendance at our meetings.

Our County Association has held two meetings during the year, both of which have been well attended, and more than ordinary interest has been manifested.

Our semiannual meetings, which are held in October, are proving especially profitable, for at that meeting the time is wholly given up to the reading and discussion of medical and surgical papers, and to hearing reports of cases of special interest. At our October last meeting a paper was read by Dr. David Sullivan of New London, on "Malignant Deciduoma," and another by Dr. M. G. Gill of Hartford, "on "Etiology and Treatment of Otitis Media." Both of these papers proved

to be of more than ordinary interest to the large membership present.

The annual meeting of the County Association was held at Willimantic, April 21, and there was a full attendance. We had as our honored guest Dr. S. D. Gilbert, President of the State Society, who addressed the meeting; also Dr. Ralph S. Goodwin, delegate from Litchfield County. Dr. W. L. Higgins of South Coventry gave an interesting talk on "Recent Legislation in Medicine," and brought out many features of interest in regard to what is being done along those lines.

Windham County is favored in having two well-equipped and prosperous hospitals, St. Joseph's Hospital at Willimantic, and the Day-Kimball Hospital at Putnam. Both of these hospitals are doing excellent work, with increasing demands upon them year by year. To meet this demand the Day-Kimball Hospital has now about completed a wing, forty by forty feet, three stories high, built absolutely fireproof, at a cost of over twenty thousand dollars. This addition will give the much needed room for carrying on the work more efficiently and more scientifically.

No personal dissensions have arisen among our members during the year, and I think I can safely say that the Windham County Medical Association was never in as prosperous condition as it is at the present time. Our Supreme Ruler has dealt very kindly with our membership, and I am happy to report no deaths during the year. We have had an increase of two to our membership.

Respectfully submitted,

J. B. KENT.

(f) Litchfield County, by Dr. Elias Pratt:

Mr. President and Gentlemen of the House of Delegates:

There is no written report for Litchfield County. Dr. Welch was unable to prepare one, and I was not aware of his not having done so until yesterday. I then drove twenty-five miles into the country, to see the clerk and get sufficient data upon

which to prepare a report; but he was away, and would not return until evening. I have, however, this to say, from my own personal knowledge as a member of the Society: that it is in a flourishing condition. Our membership has slightly increased, I think. We have had two meetings this year, the annual meeting and the semiannual, both of which were excellent and well attended. At our annual meeting, we had with us the President of this Society, and also delegates from Fairfield County. This added greatly to the interest of the meeting.

We have one hospital, the Litchfield County Hospital, at Winsted, which is in a flourishing condition and doing splendid work. I believe that, with proper efforts, the membership in the Society can be increased still more. It seems to me that it is a mistake, somewhere, that only about half or two-thirds, perhaps, of the so-called regular practitioners of the State are members of this Society; and I feel that there ought to be an increase in our membership.

Respectfully submitted,

ELIAS PRATT.

(g) Middlesex County, by Dr. James M. Keniston:

Mr. President and Gentlemen of the House of Delegates:

The year now ending has been fruitful in achievement and full of encouragement for the year before us. The two meetings of the Middlesex County Association were well attended and interesting. At the semiannual meeting we were honored by the presence of the President of the State Society, whose words of counsel and commendation stimulated every member to renewed zeal. We also had a valuable paper by a guest, Professor Walter B. Cannon of Harvard, on "Results of Researches at Harvard Physiological Laboratory on Gastro-Enterostomy, etc."

At this meeting the following delegates were present: Dr. E. W. Goodenough, New Haven County, and Dr. C. E. Pendleton,, Tolland County; and at the annual meeting, Dr. E. C.

Chipman, New London County. It is desirable that each delegate to the County Associations should attend at least *one* of the meetings. It is the duty of a delegate to attend them, or send an alternate. Duty sometimes entails inconvenience, but its fulfillment confers a double pleasure—both delegate and Association are benefited.

At the annual meeting, a committee of three was appointed, with full power to arrange a subject for discussion at the semiannual meeting in October, 1910, to be held jointly with the State Society. This committee will confer with the State officers in regard to arrangement of the programme. Middlesex County is prepared to give a genuine and cordial welcome to the State Society, and would be glad to have every member present at the joint meeting next October.

The Secretary of the County Association reports the withdrawal of one member, who has removed to New London County. There have been no deaths, and no additions to our Association, whose membership now is forty-two (42). There are two candidates awaiting action on their applications. The Central Medical Association has held regular monthly meetings from October to May, with a good average attendance. Some valuable papers were presented by the members and by medical guests.

A great deal of work has been done in the county to help the crusade against tuberculosis. Organization and coöperation and persistence and perseverance are needed, and are represented by the Middlesex Anti-Tuberculosis Society, which was first organized at a meeting held June 25, 1908, in response to the call of the State Committee selected by the International Congress on Tuberculosis. On January 26, 1909, the organization was completed, and a full list of officers and an Executive Committee were elected as follows:

Officers—Mrs. James A. Newlands, President, Middletown; Dr. J. Francis Calef, 1st Vice President, Middletown; Dr. Thomas P. Walsh, 2d Vice President, Middletown; Dr. George N. Lawson, 3d Vice President, Middle Haddam; Miss Edith D. Calef, Secretary, Middletown; Mr. G. Ellsworth

Meech, Treasurer, Middletown; Miss Mariana Townsend, Financial Secretary, Middletown. Executive Committee—Dr. F. S. Smith, Chester; Dr. D. A. Fox, Clinton; Dr. C. H. Bush, Cromwell; Dr. A. M. Pratt, Deep River; Mrs. E. P. Hull, Durham; Mrs. W. C. Reynolds, East Haddam; Mrs. E. H. Bevin, East Hampton; Dr. F. B. Bradeen, Essex; Dr. F. P. Chillingworth, Haddam; Mr. E. C. Nichols, Killingworth; Mrs. E. P. Camp, Middlefield; Dr. James Murphy, Middletown; Dr. Irwin Grannis, Old Saybrook.

The objects of this society are "to promote a thorough investigation of conditions regarding tuberculosis in Middlesex County; to educate public opinion as to the causes and prevention of tuberculosis; and to take such action as may be best to eradicate the disease." The President informs me "the society secured the services of one of the district nurses, hiring a substitute to do her regular work while she personally investigated and collected data regarding cases of tuberculosis, thirty-five in all. It is planned to gain more information, especially about cases outside of Middletown, through the Committee on Statistics and the members of the Executive Committee.

"The aim of *educating the public* was furthered by sending delegates to the Tuberculosis Congress, who reported what they learned there in a public meeting in Middletown; by securing men eminent in their line to lecture in public on subjects relating to tuberculosis; by giving everyone a chance to visit free the Tuberculosis Exhibit of the Boston Association, held in Middletown City Hall; and by distributing illustrated literature on tuberculosis printed in *five languages*.

"The society hopes to open a free clinic, where all in the county unable to pay a doctor, but suspecting that they may have tuberculosis, may be examined free of charge. It has rented for the current year a splendid site in North Cromwell, where it intends to establish a camp for tuberculosis patients, operating it first as a day camp, and later keeping it open day and night, provided sufficient funds can be obtained."

The health of the community is menaced by many dangers besides tuberculosis, and it is a source of gratification and

relief that the City (Middletown) Health Officer has been very active and successful in his official capacity in carrying out the various hygienic measures designed to prevent disease. The law against spitting in public places, the rigid inspection of milk, frequent fumigation of school buildings, inspection of tenement houses, and enforcement of the building and sanitary laws, deserve special mention. In these various activities the hearty coöperation of the medical profession and the intelligent laity is evident to all, and with united action great results are sure, since removal of sources of infection and educative measures are combined.

Zeal for public health and the introduction of preventive measures pervades the entire county, the physicians acting as instructors and educators in their respective communities. Notices forbidding spitting are posted in factories and public buildings, and attention is called to the dangers of a neglect of this precaution. It can truthfully be said that harmony and concord and a spirit of coöperation characterizes our entire membership.

The Middlesex Hospital can to-day look back upon six years of progressive utility and successful service, and contemplate the future with courage and hope. It has been overcrowded during the last three years, but a new wing, nearly completed, will afford great relief. This wing provides a main kitchen, nurses' dining-room, pharmacy, and laboratory on one floor, while above are private rooms and a children's ward. These rooms and wards are furnished by various benevolent individuals.

This hospital, with its excellent management, has been able to pay its running expenses. Its endowment, however, is altogether inadequate, and should be increased largely, in order to enable it to always keep its equipment up-to-date and to respond to any emergency. Undoubtedly some benevolent friends of humanity will devote a share of their abundance to this noble institution in the future, as in the past.

The Connecticut Hospital for the Insane is as usual overcrowded. The roster shows an average of 2,460 patients.

The district nurses find their work constantly increasing its scope, and their services are invaluable. During the last official year they made 5,385 visits. A new feature was inaugurated on April 18, 1910, when systematic visits to the public schools of Middletown began. The nurse looks into the condition of the eyes, ears, throats, teeth, etc., of the pupils, and refers cases appearing to need treatment to physicians, dentists, and oculists. "Backward children" are investigated; home conditions, dietary, and habits studied; dressings are applied, etc., etc. This work is arranged for two months only, but a successful start has been made. Funds should be provided from some source to make this desirable and essential work permanent. "Any permanent success in preventive medicine can only be attained when we begin with the children."

In regard to contract work, efforts are in progress to insure its abandonment. It is not always easy to secure proof of its existence. We hope during the coming year to ensure its complete and permanent abandonment, without losing any of our members.

Our Secretary reports that no member is in arrears for taxes.

Respectfully submitted,

JAMES M. KENISTON.

(h) Tolland County, by Dr. Thomas F. Rockwell:

Mr. President and Gentlemen of the House of Delegates:

As Councilor for the Tolland County Medical Association it is my privilege to report once more that everything has been pleasant and harmonious during the past year, with no loss in membership to our Association by removal or death.

Every regular practitioner in the county is now a member of our Association in good standing, except one young man who is doing contract work for one of our German sick and benefit societies. I trust before the close of another year that he will see that it is for his interest to give up his contract and become one of us.

Our Association has had two well-attended meetings. The semiannual meeting was held at Stafford Springs and the annual at Rockville. At both meetings the papers were remarkably good and the discussions were spirited and full of practical suggestions.

Dr. Samuel D. Gilbert, our honored President of the State Society, favored us with his presence at our annual meeting. His address and talk on the great need of the old-time physician was listened to with marked interest and attention.

Respectfully submitted,

THOS. F. ROCKWELL.

(5) Report of the Treasurer, Dr. Joseph H. Townsend (New Haven), to the Connecticut State Medical Society, for the year ending May 25, 1910:

REPORT OF THE TREASURER.

RECEIPTS.

Balance from old account,	.	.	.	.	.	\$1,353.44
Cash from County Clerks:						
Hartford County,	.	.	.	.	\$561.60	
New Haven County,	.	.	.	.	561.60	
New London County,	.	.	.	.	162.00	
Fairfield County,	.	.	.	.	394.20	
Windham County,	.	.	.	.	99.90	
Litchfield County,	.	.	.	.	124.20	
Middlesex County,	.	.	.	.	113.40	
Tolland County,	.	.	.	.	54.30	
					<hr/>	
Total receipts from taxes,	.	.	.	.	\$2,071.20	
					<hr/>	
						\$3,424.64

DISBURSEMENTS.

Dr. F. S. Crossfield, anniversary chr.,	.	\$100.75
Hartford Medical Society,	.	11.50
Stenographer,	.	75.00

Dr. E. J. McKnight, chr. Legislative	
Com.,	\$ 67.35
Hugh M. Alcorn,	250.00
<i>Yale Medical Journal</i> for publishing Pro-	
ceedings, paid on account,	2,310.58
Distributing Proceedings in Bridgeport,	3.66
Underwood Typewriter Company,	100.00
Printing, stationery, etc.,	94.05
Postage and telephones,	25.38
Clerical Work,	20.42
Salary of Secretary,	150.00
Salary of Treasurer,	25.00
Bond of Treasurer,	5.00
Expenses semiannual meeting,	18.80
	<hr/>
	\$3,257.49
Cash to balance,	167.15
	<hr/>
	\$3,424.64

Unpaid balance due *Yale Medical Journal* for publishing the Proceedings \$416.00, making net deficit \$248.36.

ARREARS IN TAX LAID MAY 26, 1909.

Hartford County,	\$129.00
New Haven County,	204.00
New London County,	none
Fairfield County,	51.00
Windham County,	12.00
Litchfield County,	30.00
Middlesex County,	none
Tolland County,	3.00
	<hr/>
Total,	\$429.00

DR. GURDON W. RUSSELL FUND.

Feb. 15, 1910, Received from Mary I. B. Russell,
Executrix of the will of Dr. G. W. Russell, . \$4,853.17

March 23, 1910, Ætna Life Insurance Co., in payment of policy on life of Dr. G. W. Russell, . \$2,000.00

Total on deposit in Union Trust Co., New Haven, \$6,853.17

Respectfully submitted,

JOSEPH H. TOWNSEND.

This is to certify that we have examined the accounts of the Treasurer, compared the expenditures with the vouchers and find the cash on hand as stated.

C. S. RODMAN,
GOULD A. SHELTON.

New Haven, Conn., May 25, 1910.

(6) Report of the Committee on Public Policy and Legislation, by Dr. Everett J. McKnight (Hartford):

REPORT OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

Mr. President and Gentlemen of the House of Delegates:

At the date of the last annual meeting the State Legislature was in session and up to that time only one measure of interest to the medical profession had received final action. It gave us great pleasure to report at that time that the Committee on Public Health and Safety returned an unanimous adverse report upon the anti-vaccination bill and that upon the motion to accept report of committee and reject the bill not a dissenting vote was cast either in the House or Senate.

The optometry bill was adversely reported upon by the Committee on Public Health and Safety and rejected in the House, reconsidered and laid upon the table. Upon being taken from the table two weeks later the bill was unanimously rejected both in the House and Senate.

The bill "On the Practice of Medicine and Surgery," changing the date from 1912 to 1914 at which certain requirements of the amendment of 1907 shall take effect, was passed.

A bill concerning the revocation of licenses of physicians, giving the State Board of Health power to revoke the registration or license of any physician practicing within the State upon proof satisfactory to said board that such certificate of registration or license was procured by fraud or false representation, was passed.

The bill to establish a colony for epileptics in the State has been before several successive legislatures. At the annual meeting two years ago the Chairman of the Committee on Public Policy and Legislation stated that if the matter was put in the hands of that committee he could promise that it would go through all right. At the last session an act entirely satisfactory to the Committee on a Colony for Epileptics of this Society was passed, with an appropriation of twenty-five thousand dollars for the purchase of the land and for the erection and equipment of the buildings authorized by this act.

Other measures of great importance but not referred by the Society to this committee were passed, including an act appointing a Board of Directors to establish county homes for the care and treatment of persons suffering from tuberculosis, for securing the enactment of which great praise is due to the late Dr. J. P. C. Foster, whose untimely death is lamented by every one of us; an act concerning the reporting and care of tuberculosis; an act concerning spitting in public places; an act concerning operations for the prevention of procreation; an act amending an act concerning the sale of certain narcotic drugs, and an act amending an act concerning the sale of poisons.

To sum up the work of this committee during the last session of our State Legislature, we can say that there was secured the passage of every act which was desired exactly as we wished it and the prevention of every objectionable measure introduced. Too great praise cannot be given the Chairmen of the Committees on Public Health and Safety, Dr. Albert W. Phillips, our homeopathic brother, the Senate Chairman and our own Dr. Gould A. Shelton, the House Chairman. It was quite apparent that many legislators voted upon these measures not in accordance at all times with their own inclina-

tions, but because they had perfect confidence in the gentlemen who were advocating them, and our successes were largely due to that fact.

At the last annual meeting of this Society this committee was requested to make a draft of such a resolution as they would like to have passed to secure the establishment of a single examining board for the State of Connecticut. As the Committees on Medical Education and Medical Legislation of the American Medical Association are now engaged in preparing a model Medical Practice Act for use in the different states, a report upon which will soon be made, your committee recommends that this matter be referred to a committee consisting of the Committee on Medical Examinations and the Committee on Public Policy and Legislation, with instructions to secure such changes in our present Medical Practice Act as shall secure one examining board for this State and shall conform as nearly as is advisable to the model act promulgated by the American Medical Association.

There was also referred to this committee a resolution of Dr. Michael H. Gill of Hartford, that all births, irrespective of any gonorrheal ophthalmia, should be reported within twenty-four hours. While your committee is entirely in sympathy with the intent of this resolution, it does not seem to the committee that the plan proposed would secure the desired results and recommends that no action be taken at the present time.

The passage of an act concerning expert medical testimony was also referred to this committee. As it is probable that the House of Delegates of the American Medical Association will take some definite action upon this subject at the coming meeting in St. Louis, we recommend that the matter be again referred to the Committee on Public Policy and Legislation, with power to act in accordance with the decision of said House of Delegates of the American Medical Association.

In regard to the motion, which was passed, of Dr. Augustus A. Crane of Waterbury, that the Committee on Public Policy and Legislation be asked to see that a bill is presented to have

physicians paid for reporting contagious diseases in the same way as they are now paid for the reporting of births and deaths, your committee reports that as the matter was referred too late for introduction into the last session of the General Assembly, unless otherwise instructed, it will be given careful attention at the next session.

Your committee wishes at this time to call attention to a proposition to establish a Department of Health with a Secretary in the Cabinet of the President which is now pending in Congress (Owen Bill, S. 6049). This is a matter of great importance and your committee requests that it may be allowed to present at the meeting of the House of Delegates to-morrow morning a resolution to be forwarded to each one of our representatives in Congress.

It has been the policy of this committee to confine its labors to matters referred to it by the House of Delegates and to the prevention of objectionable legislation that may from time to time arise. It wishes to call attention to the fact that if any legislation is desired at the next session of the General Assembly, instructions in regard to such legislation must emanate from this body at this time.

Respectfully submitted,

EVERETT J. MCKNIGHT,
CHARLES J. FOOTE,
F. M. WILSON,
ELIAS PRATT,
CHARLES E. STANLEY.

Meeting adjourned at 12.30 P. M. to a luncheon given them at the Heublein by their President, Dr. Samuel D. Gilbert, to convene again in the afternoon, at the conclusion of the Scientific Session.

AFTERNOON SESSION, WEDNESDAY, MAY 25, 1910.

The meeting was called to order at 5.10 P. M. by the President, Dr. Samuel D. Gilbert. There were present Dr. Oliver

C. Smith, Dr. John B. Kent, Dr. Elias Pratt, Dr. James M. Keniston, Dr. Thomas F. Rockwell (councilors), and Dr. Frederick B. Willard, Dr. Thomas G. Sloan, Dr. Charles J. Bartlett, Dr. James D. Gold, Dr. William J. Tracey, Dr. William B. Cogswell, Dr. Jesse M. Coburn, Dr. Robert C. White, Dr. Seldom B. Overlock and Dr. George N. Lawson (delegates), the President and the Secretary.

The following reports were then read and accepted:

(7) Report of the Committee on Medical Examinations and Medical Education, by Dr. C. A. Tuttle (New Haven). Read by the Secretary in the absence of Dr. Tuttle:

REPORT OF THE COMMITTEE ON MEDICAL EXAMINATIONS AND MEDICAL EDUCATION.

Mr. President and Gentlemen of the House of Delegates:

Your Committee on Medical Examinations and Medical Education presents for your consideration its seventeenth annual report.

The committee has had six meetings during the year and held three examinations, each extending throughout two days, at all of which all the members have been present. The work for the past year has been carried on much on the same lines as in previous years, but with special attention to certain details and the introduction of certain new methods of examination. There have been examined this year sixty-one candidates in general practice, which is twenty-two less than last year and seven less than in 1908. Of these sixty-one, forty-six only were found qualified and certificates granted, fifteen, or 24.6 per cent., being rejected. There have also been examined fifteen in midwifery, of whom six, 40 per cent., only fulfilled requirements.

During the present year there has been expressed throughout the country a desire for some form of examination, in addition to the customary written form, which would be a test of the candidate's practical ability to practice medicine.

This, however, has been anticipated by your committee in the introduction of certain clinical demonstrations. The practical test at the last examination consisted of demonstrating the use of a Janeway manometer, each candidate handling the instrument and testing blood pressure on the preceding candidate. It is our thought to enlarge upon this at an early date by the use of the microscope for the examination of histological and pathological specimens, to have urinalysis and a clinical examination upon heart, lung or tumor cases.

We have considered at length the subject of examining and licensing midwives. As it is now carried on, it is evident that the supply in this country is rapidly exceeding any just demand and that much work is taken from the younger medical men by these poorly trained foreign women, who do the work for a small remuneration and with indifferent, often bad, results. As you will note above, the number rejected this year represented 60 per cent. of all examined. The examination is conducted through interpreters, often themselves illiterate and stupid, and many times to the advantage or disadvantage of the candidates. We are, however, making the examination in all these cases more and more critical.

The committee has had for consideration recently the case of a retired army surgeon, with unquestioned credentials and ability, retired on the age limit, sixty-four years, who desires to practice in this State. The law, as interpreted by your committee and endorsed by the Attorney-General, does not permit of his being accepted without examination. We would suggest that a modification of the law be made, to admit without examination medical officers of the army, and navy, honorably discharged for age.

Your committee has heard expressed on several hands a desire for a printed report of its work, such as was published five years ago. While willing to do the work of getting out this report, it does not feel justified in again assuming the expense, which was about \$250.00.

With this year ends the term of the Secretary as a member of this committee. He wishes to express to the House of Delegates and members of the Association his sincerest appre-

ciation of the uniform interest and courtesy of all who have come intimately in contact with the work of the committee and understand its problems. The work throughout the past ten years through which the Secretary has served has been uniformly harmonious and pleasing, and in looking back over that period he notes with satisfaction the great strides which have been made in the advancing of medical education in this country, due in part, at least, to the demands of medical examining boards. He would also take this opportunity to express to the members of the board, individually, his highest personal regards and true fondness.

Presented herewith are the rules under which the board is working, a set of questions used at the last examination and a list of successful candidates of the year.

Respectfully submitted,

CHARLES A. TUTTLE.

RULES FOR EXAMINATION.

1. Examinations will be held on the second Tuesday of March, July and November, at the City Hall, New Haven, beginning at 9.30 A. M., and lasting two days, closing at 4.30 P. M. of the second day.

2. Examinations will be conducted in writing in the English language.

3. Examinations for general practice consist of ten questions in each of the following branches: 1 Anatomy. 2 Physiology. 3 Medical Chemistry and Hygiene. 4 Materia Medica, including therapeutics. 5 Practice, including pathology and diagnosis. 6 Obstetrics, including gynæcology. 7 Surgery.

4. In order to obtain a certificate of qualification the applicant must obtain a general average of 75 per cent. In no branch shall his percentage be less than 60, and in Practice, Obstetrics and Surgery the minimum requirement will be 65 per cent.

5. Examination fee, \$15.00, payable in advance on the first day of examination. Candidates once rejected may be

reëxamined at any subsequent meeting of the board but must pay full fee for each trial.

6. All candidates must be graduates of some reputable Medical College and must present their diplomas (or a certificate from the Dean of the Medical College) for inspection, to the Secretary of the board at the opening of the session. As evidence of the required preliminary education, he must also present a diploma from an accepted high or preparatory school or documentary proof that this preliminary education is equivalent thereto. From and after January 12, 1914, no person can be admitted to the examinations until, in addition to the foregoing, he shall present evidence of his having completed a satisfactory course of study of at least nine months in Chemistry, Physics and General Biology.

7. Each candidate must present his photograph as a means of identification. This will be retained and kept on file by the Secretary.

8. Formal application (blank enclosed) must be made to the Secretary at least five days before the date of the examination. This must be accompanied by a certificate of good moral character signed by two reputable citizens of this State.

9. Questions used at some former examinations will be found in the yearly Proceedings of the Connecticut Medical Society—the board is unable to supply copies.

10. A license or an examination in another state is not accepted by this board. All candidates must undergo the regular examination. It is unlawful to practice in this State before examination and license. No temporary or provisional certificate can be given.

DIGESTS OF THE LAWS OF 1907.

a. No person shall, for compensation, gain or reward, received or expected, treat, operate or prescribe, for any injury, deformity, ailment or disease, actual or imaginary, of another person, nor practice surgery or midwifery, until he has obtained a certificate of registration, and then only in the kind or branch of practice stated in said certificate.

b. No person shall obtain a certificate of registration until he has passed a satisfactory examination before one of the examining boards appointed for the purpose, nor until he has filed duplicate certificates signed by a majority of said examining board, stating that they have found him qualified to practice either medicine, surgery or midwifery, nor until he has filed duplicate statements subscribed and sworn to by him upon blanks furnished, giving his name, age, place of birth and present residence, stating of what medical college he is a graduate, and the date of said graduation, together with such other information as shall be required. No person shall be eligible to said examination until he presents to the board, by whom he shall be examined, satisfactory evidence that he has received a diploma from some legally incorporated and reputable medical college and complied with the requirements of the law concerning preliminary education. Any person passing such examination and filing said certificates and statement shall receive from the State Board of Health, upon payment of two dollars, a certificate of registration, which shall state that the person named has been found qualified to so practice. He shall be registered in the town wherein he resides or the town nearest thereto, but shall be entitled to practice anywhere in this State without further registration.

RULES FOR CONDUCTING EXAMINATIONS.

First, Help of every kind must be removed from the reach and sight of the candidate. Any candidate detected trying to give or obtain aid may be instantly dismissed from the room, and his or her paper for the entire work cancelled.

Second, Questions must be given out and answers collected punctually at the time specified for that section.

Third, If the candidate withdraws himself or herself without permission from the sight of the examiner, his or her examination shall be closed.

Fourth, All examinations shall be in writing. Pens, blotters, paper or blank books and ink will be supplied by the Secretary.

Fifth, The examination shall continue two days, the sessions of the first day being from nine-thirty to eleven, eleven to one, two to four, four to six, respectively; the sessions of the second day being the same, but closing at four-thirty instead of six o'clock.

EXAMINATIONS IN MIDWIFERY.

1. Examinations in Midwifery will be held at the same time and place as for General Practice, and under the same rules and requirements.

2. Applicants to practice Midwifery will be examined in Midwifery only and must obtain a marking of 75 per cent.

3. Examinations will be in writing; but may be taken in the language of the applicant, the applicant to furnish and pay an interpreter acceptable to the board.

4. The examination fee will be \$10.00 and is payable at the time of taking the examination.

5. All applicants must be graduates of some reputable college or school of Midwifery and must present her diploma for inspection at the opening of the session. A photograph is also required.

EXAMINATION QUESTIONS, MARCH 8-9, 1910.

SURGERY.

(Two hours.)

1. Aneurism—(a) causation; (b) varieties; (c) diagnosis.

2. Carbuncle—(a) defined; (b) predisposing causes; (c) diagnosis; (d) treatment.

3. Local anæsthesia. Technic of its application in hernia, removal of appendix or thyroidectomy.

4. Practical demonstration of the use of Janeway's manometer.

5. State your views as to the scope and value of blood pressure determinations in operative surgery under general anæsthesia?

6. Describe or depict the arrangement of the synovial sheaths of the palm and fingers.

7. Give the differential diagnosis between a fracture and dislocation at the hip.
8. Diagnosis and treatment of fractured clavicle.
9. What do you consider the best operation for internal hæmorrhoids? Describe your technic.
10. Carcinoma—(a) varieties; (b) location in order of frequency; (c) metastasis; (d) differentiation.

CHEMISTRY AND HYGIENE.

(One and one-half hours.)

1. (a) How dangerous is impure air? (b) How tested? And what would be index of impurity? (c) What hygienic measures should be observed in our public schools?
2. Give chemical name and formula for the following: (a) blue vitriol; (b) common salt; (c) plaster of Paris; (d) Paris green; (e) sugar of lead; (f) corrosive sublimate.
3. (a) What are peptones? (b) How evolved? (e) What are proteoses? (d) What are ptomaines?
4. (a) What is urea? (b) What is the pathological significance of urea in the urine? (c) How estimated?
5. (a) Given a neutral or faintly acid urine and on heating it a precipitate forms. What is this precipitate, and how do you determine it? (b) Given an alkaline urine and on heating no precipitate is seen; is albumen present?
6. (a) What are ferments? (b) Classify them. (c) Name three.
7. Name the chief constituents of the bile?
8. (a) Discuss the influence of alcohol on the race. (b) Is it food or poison?
9. Is sanatorium treatment of tuberculosis worth while?
10. What are the symptoms of (a) acute poisoning of phosphorus? (b) Treatment and antidote. (c) Test.

ANATOMY.

(Two hours.)

1. Give (a) the number of bones in the human body. (b) Classify them by regions of body. (c) Classify by variety and

give examples of each. Give briefly the macroscopical and the microscopical structure of bone.

2. Describe the bony relationship and landmarks of the elbow joint.

3. Describe (a) the anatomical relations and the structure of the mammary gland, (b) its nerve supply and (c) its lymphatic drainage.

4. Of what does the sympathetic nervous system consist? What does the cerebro-spinal system comprise?

5. State the origin and mention three branches of the ophthalmic nerve. To which system does this nerve belong and what is its function?

6. Give the surface topography of (a) the appendix vermiformis; (b) the apex of the heart; (c) the apices of the lungs; (e) the two kidneys posteriorly.

7. What vessels unite to form (a) the basilar artery? (b) What is its course?

8. Define epigastric region and tell what organs or parts of organs are found in the same. Diagram.

9. What is (a) the stomach? (b) Give its gross anatomy. (c) Give the minute anatomy of its mucosa.

10. Write briefly on (a) the decidual teeth; (b) the permanent teeth.

N. B.—Write briefly, concisely and legibly upon the questions asked. Diagram whenever useful.

PHYSIOLOGY.

(One and one-half hours.)

1. What is the relation of the red and white blood corpuscles as to (a) size, (b) numbers, (c) function? What causes the variation in the color of the blood?

2. State the source and describe the function of the saliva. Explain the importance of thorough mastication as related to digestion.

3. Describe the muscular movements of the large intestine, and explain their function.

4. Give a physiological explanation of the rapid respiration of pneumonitis.
5. Give the localization in the cerebral cortex of the motor function of (a) the left side of the face; (b) the right arm; (c) the left leg. Also illustrate the external cranial topography of the same.
6. Describe the physical and nervous mechanism in normal urine evacuation.
7. How is the cornea nourished?
8. Define secretion and excretion. What organs of the body are purely excretory.
9. What part of the retina is the most sensitive to visual impressions? Explain this.
10. Explain the condition causing muscle fatigue.

MATERIA MEDICA AND THERAPEUTICS.

(Two hours.)

1. What is the physiological action and therapeutics of phenacetin?
2. What are the secondary effects of alcohol, upon (a) stomach; (b) liver; (c) vaso-motor system; (d) nervous system?
3. What are emetics? In what way do they act? When indicated—when contraindicated?
4. What changes take place in the blood when illuminating gas is inhaled? Give treatment.
5. What is the action and dose of pilocarpine; of apomorphine?
6. What is the physiological action, and what are the uses of potassium acetate?
7. Name three heart depressants, and tell how they act.
8. How, and upon what portion of the alimentary tract do the following drugs act?—cascara; phosphate of soda; aloes; jalap and calomel.
9. Write a prescription in Latin, unabbreviated, for acute

bronchitis, containing four ingredients, and give the action of each.

10. Treat a case of infantile convulsions.

OBSTETRICS AND GYNÆCOLOGY.

(Two hours.)

1. (a) Describe the relation between ovulation and menstruation. (b) What is the present belief as regards migration of the ovum?

2. (a) State the cause of the premature detachment of the placenta. (b) What are the dangers? (c) Treatment.

3. (a) Give all the causes of prolonged first stage labor. (b) The dangers. (c) Management.

4. (a) What are the indications for the use of forceps? (b) What condition necessitates version rather than forceps? (c) What Cæsarian section rather than version?

5. (a) What are the changes that occur in the uterus during pregnancy? (b) After delivery?

6. Differentiate an ovarian cyst from (a) ascites; (b) hydramnios; (c) fibroid tumor; (d) distended bladder; (e) hæmatometra.

7. (a) What is sapræmia? (b) How does it differ from septicæmia? (c) Should treatment differ?

8. (a) What pathological conditions require curettage? (b) Give the operative technique.

9. (a) Give three causes for post-partem hæmorrhage? (b) Your treatment for each.

10. (a) What are the operative procedures in the treatment of prolapsus uteri? (b) Give indications for each.

PRACTICE, PATHOLOGY AND DIAGNOSIS.

(Two hour and one-half hours.)

1. Describe the varieties of stomatitis: (a) simple, (b) aphthous, (c) mycotic, (d) ulcerative. Give the causes and treatment.

2. Give the etiology of congestion of the liver, active and passive.
3. Differentiate cardiac asthma from bronchial or spasmodic asthma—symptomatically and pathologically.
4. What are the causes of albuminuria, renal and extrarenal?
5. Describe a case of acute inflammatory rheumatism; state its complications and sequels.
6. What are the varieties of influenza? Give the prominent symptoms of each variety.
7. Diagnosis of scarlet fever, small-pox, measles, and chicken-pox; (a) period of incubation; (b) eruption; (c) course of each disease.
8. Differentiate between cerebro-spinal fever and tubercular meningitis, pathologically.
9. Give the symptoms and treatment of chorea.
10. When is the eye ametropic, and what are the forms of ametropia?

QUALIFIED IN MARCH, 1909.

- Lowe, L. J., Tufts, 1902.
McLellan, W. E., Toronto, 1904.
Healy, T. F., L. I. College Hospital, 1908.
Smith, S. Z., Columbia, 1906.
Hawley, G. F., Cornell, 1899.
Platt, D. P., N. Y. Univ. & Bell., 1907.
Rosen, B. J., Yale, 1906.
Haylett, H. B., Univ. Vt., 1907.

IN JULY.

- Byrne, D. J., Yale, 1909.
Yergeson, R. M., Columbia, 1909.
Fruin, J. W., L. I. Coll. Hos., 1908.
Herr, E. A., Univ. Vt., 1909.
Klein, J. M., Univ. Vt., 1909.
Landry, A. B., Jefferson, 1909.
Preciosi, A., P. & S., Balt., 1909.

Lynch, E. J., Univ. Penn., 1909.
Ten Eyck, G. S., Syracuse, 1908.
Flaherty, J. E., Georgetown, 1908.
Dunn, G. W., Balt. Med., 1909.
Fischer, A., N. Y. Univ. & Bell., 1909.
W. J. Riordan, Balt. Med., 1909.
Allen, H. W., Med. Chi., 1909.
Buttner, J. S., Yale, 1909.
Cooley, C. M., Yale, 1908.
McCullough, E. A., Harvard, 1894.
Waterman, P., Cornell, 1902.
Gallivan, T. H., Yale, 1909.
McGuire, W. C., Yale, 1909.
Meade, C. H. B., Univ. Louisville, 1902.

IN NOVEMBER.

Wickware, B. L., Queens, 1909.
Zeiner, E. J., Cornell, 1903.
Pierson, F. B., Cornell, 1909.
Woodbury, W. P., Harvard, 1909.
Kirby, N. H., N. Y. Univ., 1884.
Woisard, I. J., Georgetown, 1909.
Hale, F. J., Columbia, 1909.
Neuman, H. A., L. I. Coll. Hos., 1909.
Morrissey, W. T., P. & S., Balt., 1909.
Lawton, R. J., Md. Med., 1908.
Brown, K. O., Kansas, 1902.
Waite, R. L., Johns Hop., 1909.
D'Agostino, F., Univ. Naples, 1905.
Kiernan, E. C., Yale, 1909.
Riordan, W. F., Balt. Med., 1909.
Marsh, A. D., Yale, 1908.
Tileston, W., Harvard, 1909.

(8) Report of the Committee on Scientific Work, by Dr. George Blumer (New Haven). Read by the Secretary in the absence of Dr. Blumer:

REPORT OF THE COMMITTEE ON SCIENTIFIC
WORK.

Mr. President and Gentlemen of the House of Delegates:

In the five years that this committee has been in existence certain methods have been evolved which have been handed down by the permanent member of the committee, the Secretary, so that the preparation of a programme, while involving some correspondence and a few meetings, is not exceedingly onerous. In preparing the programme which we present this year we have kept in mind certain principles which we deem essential. The most important of these is limitation of the number of papers presented, so that there is ample time for presentation and discussion. Proper grouping of the papers is also, we believe, of great value, as it enables those who cannot be present at all sessions to choose those which they are most interested in. Representation on the programme of various sections of the State is also desirable, and this also we have endeavored to secure, though our success in this direction has been somewhat limited by our inability to always secure papers that we asked for from a given section. The programme is as follows:

PROGRAMME.

WEDNESDAY AFTERNOON, MAY 25, 1910, 2 P. M.

*The Diagnosis of Insanity—How can the General Practitioner Determine, Demonstrate, and Certify the Existence of Mental Disease in a Given Individual, alleged to be Insane—*James M. Keniston, Middletown. (Discussion opened by Whitefield N. Thompson, Hartford; Max Mailhouse, New Haven, and William E. Fisher, Middletown.)

*Instructions to Patients Suffering from Specific Urethritis—*Percy D. Littlejohn, New Haven. (Discussion opened by Frank H. Coops, Bridgeport, and Charles S. Stern, Hartford.)

*The Management of Syphilis—*Alfred G. Nadler, New Haven. (Discussion opened by Ralph A. McDonnell, New Haven; Thomas M. Bull, Naugatuck, and Charles C. Beach, Hartford.)

A Consideration of the Anatomy and Clinical Importance of the Subdeltoid Bursa—Paul P. Sweet, Hartford. (Discussion opened by Ernest H. Arnold, New Haven, and Ansel G. Cook, Hartford.)

The Ideal Nose and Pharynx—Frederick M. Wilson, Bridgeport. (Discussion opened by Ernest O. Winship, New London; Dorland Smith, Bridgeport, and Carl E. Munger, Waterbury.)

THURSDAY MORNING, MAY 26, 1910, 9.30 A. M.

The Treatment of Infection Following Abortion, Miscarriage, and Labor—Charles A. Monagan, Waterbury. (Discussion opened by Thomas W. Chester, Hartford; Otto G. Ramsay, New Haven; Myron L. Cooley, Waterbury, and Samuel M. Garlick, Bridgeport.)

The Surgical Treatment of Gastric and Duodenal Ulcers—Everett J. McKnight, Hartford. (Discussion opened by David C. Brown, Danbury; Oliver C. Smith, Hartford, and Edward W. Smith, Waterbury.)

Treatment of Fractures—George W. Hawley, Bridgeport. (Discussion opened by Harry M. Lee, New London; Philip D. Bunce, Hartford, and William H. Carmalt, New Haven.)

Some Principles of Intracranial Surgery—William F. Verdi, New Haven. (Discussion opened by Leonard W. Bacon, New Haven, and Max Mailhouse, New Haven.)

THURSDAY AFTERNOON, MAY 26, 1910, 2.30 P. M.

The Treatment of Tuberculous Patients Outside the Sanatoriums—Dudley B. Deming, Waterbury. (Discussion opened by David R. Lyman, Wallingford, and Thomas J. Kilmartin, Waterbury.)

Some Features of Rectal Alimentation—Louis M. Gompertz, New Haven. (Discussion opened by Prof. L. B. Mendel, New Haven, and Charles J. Foote, New Haven.)

Chronic Family Jaundice—Wilder Tileston, New Haven. With Walter A. Griffin, Sharon, Mass. (Discussion opened by George Blumer, New Haven.)

Periodic Attacks of Indigestion in Children, Accompanied by the Presence of Diacetic Acid in the Urine—Walter G. Murphy, East Hartford. (Discussion opened by Frank P. Underhill, New Haven; Henry M. Steele, New Haven, and Charles A. Goodrich, Hartford.)

The Relative Value of Symptoms, Physical Signs, Tuberculin, and the X-Ray in the Diagnosis of Tuberculosis—Henry F. Stoll, Hartford. (Discussion opened by William B. Bartlett, Hartford, and David R. Lyman, Wallingford.)

Respectfully submitted,

GEORGE BLUMER.

(9) Report of the Committee on Honorary Members and Degrees, by Dr. Edmund P. Douglass (Groton). Read by the Secretary in the absence of Dr. Douglass:

REPORT OF THE COMMITTEE ON HONORARY MEMBERS AND DEGREES.

Mr. President and Gentlemen of the House of Delegates:

The Committee on Honorary Members and Degrees beg leave to report that no names have been presented to them for honorary memberships or degrees, and that your committee has no business to bring before your honorable body at this session.

Respectfully submitted,

E. P. DOUGLASS.

(10) Report of the Committee of Arrangements, by Dr. Otto G. Ramsay (New Haven). Read by the Secretary in the absence of Dr. Ramsay:

REPORT OF THE COMMITTEE OF ARRANGEMENTS.

Mr. President and Gentlemen of the House of Delegates:

The Committee of Arrangements have to report that they have planned to entertain the members of the State Society

at a smoker on Wednesday evening at 8.30 P. M., at the rooms of the New Haven Medical Society in the Young Men's Christian Association.

On Thursday evening the annual dinner of the Society will be held at the New Haven Lawn Club. The dinner will be \$2.50 a plate, and tickets may be obtained from the Secretary or from any member of the Committee of Arrangements. At this time the committee wish to call attention to the slowness of response from the members of the Society as to their expectation of attending the annual dinner. This makes it very difficult for the committee to make any definite arrangements as to the number of diners, and for the benefit of future committees they felt that it might be well to call this apparent carelessness to the attention of the members that they may respond earlier in the future.

Respectfully submitted,

OTTO G. RAMSAY,

C. J. FOOTE,

RAYNHAM TOWNSHEND.

(11) Report of the Committee on a Colony for Epileptics, by Dr. Max Mailhouse (New Haven):

REPORT OF THE COMMITTEE ON A COLONY FOR EPILEPTICS.

Mr. President and Gentlemen of the House of Delegates:

Your committee has to report, this year, a consummation of the work done last year in that the General Assembly of 1909 passed and Governor Frank B. Weeks signed a bill providing for the "Establishment of a Colony for Epileptics and making an Appropriation therefor," the latter being for the sum of \$25,000.00, for which a site was to be purchased and suitable buildings erected thereon. In accordance with this act, a copy of which is hereby appended, the Governor has already appointed (on August 12, 1909) as a committee to select a proper site, Dr. Wm. L. Higgins of South Coventry, an

ex-president of this Society, Judge L. T. Tinger of Rockville and Dr. Max Mailhouse of New Haven. This committee has been actively at work since its appointment, and, though no particular site has as yet been decided upon, has under consideration a number of excellent farm properties which may be made suitable for the purposes of a colony.

We desire to congratulate the Society upon the progress already made and have no doubt that another year will see the Connecticut Colony for Epileptics started upon its mission.

Respectfully submitted,

MAX MAILHOUSE,
EDWIN A. DOWN,
FRANK K. HALLOCK,
A. R. DIEFENDORF.

AN ACT PROVIDING FOR THE ESTABLISHMENT OF A
COLONY FOR EPILEPTICS AND MAKING AN
APPROPRIATION THEREFOR.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

SECTION 1. There shall be established within this state a colony for epileptics, the object of which shall be the scientific treatment, education, employment, and custody of epileptics and which shall be known as the Connecticut Colony for Epileptics.

SEC. 2. The governor, with the advice and consent of the senate, shall, within thirty days after the passage of this act, appoint a commission consisting of three citizens of this state whose duty it shall be within one year after the approval of this act to acquire, by purchase or otherwise, suitable land in this state upon which to establish said colony. In the selection of said site, said commissioners shall consider the natural advantages of the location for varied forms of husbandry and allied occupations, water supply, drainage, railroad facilities, and general adaptability for the purposes stated in section one of this act. Said commissioners shall serve without compensation, but they shall be allowed and paid all reasonable expenses incurred by them in the discharge of their duties.

SEC. 3. Said commissioners shall purchase a tract of land of not less than two hundred acres, the title to which shall be approved by the attorney-general and shall be taken in the name of the state of Connecticut.

SEC. 4. The government and control of said institution shall be vested in a board of trustees consisting of eight members, to be appointed by the governor, one from each county. Two shall serve for one year, two for two years, two for three years, and two for four years, and thereafter each member of said board shall hold office for four years unless sooner removed by the governor for cause. The governor shall fill any vacancy occurring during the term of any member of said board. Said trustees shall be allowed their reasonable traveling and other necessary expenses, to be paid as other expenses of said institution are paid, but no trustee shall receive any compensation for his services.

SEC. 5. The trustees shall have charge of the general interests of the institution, make and execute its by-laws, appoint and remove its officers, attendants, and employes, fix their compensation, exercise a strict supervision over all its expenditures, and may receive, by bequest, devise, or gift, property for the use of the institution, and make purchases of lands and take deeds therefor in the name of the state. They shall also appoint a superintendent, who shall not be one of their own number, and who shall be a reputable physician and surgeon of experience in a similar institution or in an institution for the insane.

SEC. 6. They shall also appoint a treasurer, who shall give a bond to the state in the sum of ten thousand dollars to account faithfully for all property received by him as treasurer. He shall keep accurate accounts of his receipts and expenditures, and of all property intrusted to him, which accounts, with the vouchers, shall be submitted quarterly, and oftener if required, to the trustees, with a written statement of his disbursements and funds in hand; and his books shall be at all times open to inspection by the trustees.

SEC. 7. Said trustees shall procure plans for the construction and equipment of the necessary buildings for said colony, which shall be according to the best ideas of sanitary and standard construction. They shall advertise for bids for the construction and equipment of said buildings, and the contract therefor shall be awarded to the lowest bidder, who shall give a bond with surety to the state and to the satisfaction of said board of trustees for the faithful performance of his contract. There is hereby appropriated out of any funds not otherwise appropriated, twenty-five thousand dollars, or so much thereof as may be necessary, for the purchase of the land and for the erection and equipment of the buildings authorized by this act.

SEC. 8. Said trustees are authorized to admit patients to said institution under special agreements; provided, however, that hopeful cases shall have preference as to admission, and in no instance shall a hopelessly or violently insane person be admitted. The expense of support and treatment of all patients admitted to said institution shall

be paid in whole or in part out of the estate of such person, if he have any estate; if he have no estate it shall be paid by the town to which he belongs, and if he belongs to no town in this state said expense shall be paid by the state.

SEC. 9. Whenever there shall be found in this state any pauper or indigent epileptic who may be benefited by being sent to said institution, such proceedings may be had for the commitment of such person as are now provided by law for the commitment of insane paupers and indigent persons; and all laws relating to the commitment and support of the indigent insane are hereby made applicable to epileptics committed as indigent to the Connecticut Colony for Epileptics.

SEC. 10. Epileptic patients may be transferred from any institution in this state to the Connecticut Colony for Epileptics upon the recommendation of the medical superintendent of the respective institutions from and to which it is desired to transfer such patients. If desirable at any time, applications for such transfer may be referred to the state board of charities for investigation and recommendation. The cost of such transfer shall be paid by the institution making the transfer and shall be paid out of the maintenance fund of such institution.

SEC. 11. The board of trustees is empowered to make such rules and regulations respecting the care, custody, and discipline of patients, and the management of the institution and its affairs, as they may deem best for the interests of the patient and the state. All persons admitted to the institution shall, until discharged therefrom, be under the custody and control of the superintendent; and the superintendent may, subject to such regulations as the trustees may adopt, restrain and discipline any patient in such manner as he may deem necessary for the welfare of the patient and the proper conduct of the institution.

SEC. 12. No patient shall be discharged from said institution until, in the judgment of the superintendent, the mental and physical condition of such patient justifies his discharge.

SEC. 13. The board of trustees shall meet once each month. They shall keep a full and accurate account of their proceedings in a book to be provided for that purpose. The superintendent shall report annually to the trustees, or oftener if required by them, and the trustees shall report biennially to the general assembly, accompanying their report with the annual report of the superintendent. Settlement with the comptroller, making of reports and the keeping of records, inventories, and accounts shall, so far as practicable, conform to existing laws regarding institutions for the insane.

SEC. 14. This act shall take effect from its passage.

(12) Report of the Member of the National Legislative Council, by Dr. Everett J. McKnight (Hartford):

REPORT OF THE MEMBER OF THE NATIONAL LEGISLATIVE COUNCIL.

Mr. President and Gentlemen of the House of Delegates:

A joint conference of the Committees on Medical Education and Medical Legislation of the American Medical Association was held at the Congress Hotel, Chicago, Ill., February 28 and March 1 and 2, 1910. Your representative on the National Legislative Council had made all preparations to attend, but at the last moment was prevented from doing so by the serious illness of a patient and friend whose death was imminent.

A report of the educational part of that conference appeared in the January Bulletin of the American Medical Association, which was held back for that purpose. A report of the legislative part is not yet published, and all your committee can now report is, that following said conference a committee was appointed to formulate and model a bill which will appear in the report of the Committee on Legislation at the coming annual meeting in St. Louis.

Your committee desires to call the attention of the Society to the proposition to establish a Department of Health with a Secretary in the Cabinet of the President (Owen Bill, S. 6049). This is a matter of great importance and it is to be hoped that all members of this Society who have personal acquaintance with our representatives in Congress will use their best efforts to secure a solid affirmative vote from the State of Connecticut when the bill comes up for action.

EVERETT J. McKNIGHT.

(13) Report of the Delegates to the American Medical Association, by Dr. Everett J. McKnight (Hartford):

REPORT OF THE DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

Mr. President and Gentlemen of the House of Delegates:

It was very much regretted by everyone that President Burrell was prevented by illness from being present at the meeting.

In his absence the first Vice President, Dr. T. J. Murray of Montana, occupied the chair during the first day.

The State of Connecticut was represented on only one committee, that on Credentials, where most excellent work was done by Dr. D. Chester Brown. The reports of officers showed the affairs of the Association to be in most excellent condition. The stormy meeting which had been predicted and expected by many turned out to be a veritable love feast. Dr. William H. Welch, in his report as Chairman of the Board of Trustees, struck the keynote when, referring to the remarkable advance made by the Association in recent years, he said, "All of this and much more has been accomplished in the brief period of ten years, and your Trustees feel that they would be derelict in their duty did they not add with pride and sentiments of regard that the one man above all others to whom we are indebted for these great things is our present Editor and General Manager, Dr. George H. Simmons." When later in the session Dr. Simmons was reelected, I think unanimously, General Secretary, the enthusiasm was intense and his words upon being escorted to the platform, "Gentlemen, I thank you. All I can say is if a man is to be judged by the least he ever knew and by the worst he ever did, God help everyone of us," told the whole story. Whatever he may have been in the past, he is certainly remarkably well qualified for the position he now fills.

It hardly seems necessary for me to go into detail concerning the proceedings of the House of Delegates. Should I do so, you would all be very much surprised at the number and importance of the matters which come up for consideration by that body, and you would be filled with commiseration for your delegates, who are obliged to devote nearly all of their time during the session to business matters, preventing them from gaining any personal advantage from the scientific meetings.

Under the head of Medical Legislation were considered the several bills then before Congress having relation to the medical profession or the public health—bills relating to the Public

Health and Marine Hospital service, the navy reorganization bill, measures relating to the federal and state regulation of public health, relief measures for the surviving families of persons who had died in the medical service of the country, the uniform regulation of the practice of medicine by the different states, uniform state laws on foods and drugs, and the general question of expert testimony.

Reports were received from the Council on Medical Education, the Committees on Ophthalmia Neonatorum, on Scientific Research, on Public Instruction on Medical Subjects, on Nomenclature and Classification of Diseases, on Patents and Trade Marks, on Drug-reform, on Uniform Regulation of Membership, and from the Council on Defense of Medical Research.

The name of the "Section on Surgery and Anatomy" was changed to "Section on Surgery," and the "Section on Cutaneous Medicine and Surgery" to "Section on Dermatology."

Major M. W. Ireland of the U. S. Army introduced the following resolution:

WHEREAS, By the terms of the Treaty of Geneva, 1864, and the Revised Treaty of Geneva, 1906, the emblem of the Greek Red Cross on the white ground, and the words "Red Cross" or "Geneva Cross" were adopted to designate the personnel and material of the medical departments of the military and naval forces and of the recognized volunteer aid societies in time of war, for the humane purpose of rendering them immune from attack and capture, and

WHEREAS, The United States, as well as all other civilized powers, is a signatory to said treaty, and

WHEREAS, The use of the Red Cross by medical associations and individuals of the medical profession must seriously impair the usefulness of the emblems for the purpose for which it was created and adopted; be it therefore

Resolved: That it is the sense of the American Medical Association that the use of the Geneva Cross by associations or individuals, other than those of the Army, Navy and Red Cross Society, should be discontinued and, if desirable, some other insignia adopted; and be it further

Resolved: That the adoption of this resolution be given as wide publicity as possible in the medical journals of the country.

This resolution was supplemented by one by Dr. Samuel Wolfe of Pennsylvania, substituting another design for the red cross which now appears upon the badge of the American Medical Association. These matters were referred to a special committee of five, to be appointed by the President, which shall report at the next annual meeting.

The following resolution was offered and referred to the Judicial Council:

Resolved: That the clause of the Principles of Ethics, Chapter II, Article I, Section 8, relating to the prohibition of patenting of surgical instruments by members of the medical profession, be changed, omitting surgical instruments from such prohibition.

Dr. D. Chester Brown, a delegate from this Society, introduced a resolution, which was defeated, to amend the Constitution and By-Laws so that the Committee on Amendments to Constitution and By-Laws and the Judicial Council be made one committee, this committee to be composed of the five last retiring Presidents of the Association and to be in session or available for session when the House of Delegates is in session, to receive all matters referred to it, etc.

Dr. William H. Welch of Baltimore was elected President, and your delegate in seconding his nomination was proud to say that he was born in Connecticut.

The next meeting of the House of Delegates will be held in St. Louis on June 6-9, 1910.

Respectfully submitted,

EVERETT J. MCKNIGHT.

(14) Miscellaneous Business:

DR. FREDERICK B. WILLARD (Hartford): As the Secretary of the Hartford County Association, I should like to speak about the secretaries of the County Associations. In the printed slips distributed to you by Dr. Rodman, he says: "New Haven County, with 232 members (229 taxable), paid 251 annual taxes; 71 in arrears on tax of 1908 leave 258 as credited

with its payment, 93 taxes being then on previous years. In Hartford County, with 224 members, if every dollar is credited to tax of 1908, 175 paid it; in arrears are 39, a total of 214; and unaccounted for are 10 members, a number in excess of that known to your auditors as exempt."

I wish that you all had these statements in your hands. If you have looked at this, you will have seen, in the first column, Membership, 1909, that Hartford County is credited with 224. In the next column, No. Annual Taxes Paid, no year is mentioned. That is for 1908, 175 taxes. In Hartford County, the membership for 1908 was just 214, 10 less than in 1909. It is manifestly unfair to distribute a circular of this sort among the members, calling for us to collect taxes on the membership for 1909, when we are only supposed to collect taxes for 1908. Dr. Rodman has made a mistake. The figures should have been based on the membership for 1908, which in Hartford County was 214. This accounts for the ten members that he did not account for.

Regarding the fact that from Hartford County no members were reported as suspended, yet that it says in the last column that 39 are in arrears, I would say that there are two reasons for this. The fiscal year of the county does not correspond with that of the State. The Secretary renders the report to the State as he renders it to the County Associations, viz.: April 1st. Manifestly, a number have paid their dues from the first of April to the first of May. We have a balance of one hundred dollars still due the State Treasurer. Another reason is that in our county we use a little tact, and do not report as suspended every member who has run over four or five weeks in the payment of his dues. These members may be technically suspended; but if we suspend them "off the bat," as the saying is, we lose members and taxes. The remedy is to make the fiscal year of the Connecticut State Medical Society and that of the component societies correspond with the fiscal year of the American Medical Association. With that idea in mind, I will move that a committee of three be appointed by the President to consider the advisability of amending the

By-Laws so as to make the fiscal year of this Society conform with that of each component County Association. This committee will report at the next meeting of the House of Delegates.

DR. JAMES M. KENISTON (Middletown): I am delighted with the stand taken by Dr. Willard. In regard to Middlesex County, a similar error was committed. It says: "Membership, 1909, 43; No. Annual Taxes Paid, 40." I notice, however, that none are mentioned as in arrears, but there is a conflict in the same way that Dr. Willard has explained. In Middlesex County, we have some money in our treasury; and the Secretary, as a matter of ordinary routine, to say nothing of the kindness of the act, sees that every tax due the State Society from our membership is forwarded. If these members do not pay, nothing is said about it. We are not going to have any member suspended for non-payment of dues, if we can help it. I firmly believe in having the thing fixed so that there may be conformity between the State Society and the County Societies. A great many misconceptions arise from the fact that the year ends at different dates in the different societies. The membership should be said to be such on a given date. The committee ought to fix that and the membership should be taken on the last day of the fiscal year.

THE SECRETARY: I should like to say that the American Medical Association made a recommendation in a special committee, last year, that the fiscal year be the same in the American Medical Association as in the State Societies, from January 1st to December 31st. I was a member of that committee last year, and it was continued this year. This year it has, also, considered the uniform regulation of membership. Dr. F. R. Green, Assistant Secretary of the American Medical Association and Secretary of this committee, wrote to different national associations, in order to get an idea how they kept their books; and the scheme which he devised was that we should have a book like a bank book, each page containing three sections. One of these sections represents the receipt which each member gets on paying his yearly dues. It is so arranged that a one-

cent stamp will send it as a postal card through the mail. The second division of the page contains a statement that so-and-so has paid his dues, and this is sent to the Secretary of the State Medical Society, who uses it as one of the individual cards in compiling his card index, each year. The third part is the stub which the Secretary of the County Associations retains as his evidence that the member has paid his dues. If we have a definite fiscal year and can adopt this plan, which the committee of the American Medical Association will suggest at the St. Louis meeting, the problem will be much simpler, and we shall have no difficulty in knowing at a glance who are the members in good standing and who are the suspended and expelled members; because all will be listed under the different sections to which they belong.

The motion was seconded and carried.

THE PRESIDENT: I will appoint on this committee of three Drs. Elias Pratt (Torrington), James M. Keniston (Middletown), and William B. Cogswell (Stratford). It will, also, be necessary to appoint a committee to consider the recommendations made in the report of the Committee on Public Policy and Legislation, and in the report of the Chairman of the Council; and, also, the recommendation made in the address of the President. I appoint as that committee Dr. Seldom B. Overlock (Pomfret), Dr. Charles J. Bartlett (New Haven), and Dr. John B. Kent (Putnam).

DR. JAMES M. KENISTON (Middletown): I move that the Committee on Public Policy and Legislation be requested to prepare an amendment to Sections 354, 355 and 356 of the Revised Statutes of Connecticut, providing for the registration of all epileptics, imbeciles, feeble-minded and other defectives, with such data as may be desirable; such registration to be confidential, but open to inspection by qualified persons; and to present such amendment at the next session of the General Assembly, and urge its adoption.

This is a crude statement, to be worked up by the committee and put into legal shape. I simply wanted to say that if the members realized, as I do, the growing importance of this question, and the increasing menace to the safety of our wives,

daughters and children which this unfortunate class presents, there would not be a single dissenting voice. The registration would be effected as we now register cases of tuberculosis, a confidential communication under seal; and the committee should be authorized to secure assistance from persons like members of the State Board of Charity. I have been interested in this subject for some years; and the more I investigate and study it, the graver the problem seems to me. It would afford a splendid field for the right kind of study and action.

The motion was seconded and carried.

DR. FREDERICK B. WILLARD (Hartford): The Hartford County Medical Association would remit the dues of Dr. Theodore G. Wright (New Britain), and asks the Connecticut State Medical Society to remit the same. He has been very successful as a practitioner, except financially, for a large number of years. He is now over seventy years of age, and his *only* income is from the work he does as a medical examiner. I move, therefore, that his dues be remitted.

The motion was seconded and carried.

DR. CHARLES J. BARTLETT (New Haven): I have a matter that I should like to bring up. It concerns the sale of strong carbolic acid. The majority of the deaths from suicide in this State are caused by the drinking of carbolic acid. For practical purposes, it is unnecessary to have this sold in stronger solutions than five per cent.; and I should like to offer a resolution:

Resolved, That the Committee on Public Policy and Legislation be instructed to advocate an amendment to the act concerning the sale of poisons, which shall provide that carbolic acid shall not be sold at retail in a strength greater than five per cent. solution, except on a physician's prescription.

The resolution was seconded and adopted.

DR. CHARLES J. BARTLETT (New Haven): There is one other matter which I should like to present, the use of arsenic in preserving solutions. It is unnecessary in embalming preparations, as we have a good substitute for it in formaldehyde. The use of arsenic for this purpose occasionally prevents the proper investigation of criminal cases, after the body has been

buried. I move, therefore, that the Committee on Public Policy and Legislation be instructed to advocate the enactment of a law by the General Assembly of the State, prohibiting the use of arsenical preparations of any kind, in the embalming of dead bodies.

The motion was seconded and carried.

It was then moved that the House of Delegates adjourn to meet at 9 A. M., on Thursday, May 26.

The motion was seconded and carried. Meeting adjourned.

MORNING SESSION, THURSDAY, MAY 26, 1910.

The meeting was called to order at 9 A. M. by the President, Dr. Samuel D. Gilbert. There were present Dr. Oliver C. Smith, Dr. Charles S. Rodman, Dr. Gould A. Shelton, Dr. John B. Kent, Dr. Elias Pratt, Dr. James M. Keniston, Dr. Thomas F. Rockwell (councilors), and Dr. Frederick B. Willard, Dr. Thomas G. Sloan, Dr. Charles A. Monagan, Dr. Charles J. Bartlett, Dr. James D. Gold, Dr. William B. Cogswell, Dr. Robert C. White, Dr. Seldom B. Overlock and Dr. George N. Lawson (delegates), the President and the Secretary.

The Secretary read the minutes of the preceding meetings of the House of Delegates, and these were approved as read.

The next business being the election of officers, the Secretary read a list of nominations of officers for the ensuing year, prepared by the Council, acting as the nominating committee. (See page 16.)

There being no other nominees, Dr. Elias Pratt (Torrington) moved that the report of the Board of Councilors, acting as the nominating committee, be accepted and that the Secretary be authorized to cast a ballot for the election of those thus nominated.

The motion was seconded and carried.

The Secretary reported that he had cast the ballot for those whose nominations had been just read. They were then declared elected.

DR. ELIAS PRATT (Torrington): I should like to ask whether, in case delegates to the neighboring societies are unable to go, there is a provision in the By-Laws for substitutes.

THE SECRETARY: It has been the custom heretofore for the members appointed as delegates to notify the Secretary if they cannot go. If the Secretary can find anyone who will go in their place, he then sends them credentials.

DR. ELIAS PRATT (Torrington): Well, if it be in order, I should like to move that the delegates be empowered to appoint their own substitutes.

THE SECRETARY: They frequently do that now. If anyone cannot go, he writes me to that effect, and says that so-and-so will go in his place. Generally, however, no one goes, if the original appointees decline.

DR. ELIAS PRATT (Torrington): The reason that I bring this up is that it might be that someone who is elected and cannot go might know of someone in his neighborhood who would go in his place. If he had the power, he could appoint him as a substitute, and so notify the Secretary. I move that this power be given them.

The motion was seconded.

DR. OLIVER C. SMITH (Hartford): It has been the custom to have the delegate who could not go communicate with the Secretary. I do not see any especial advantage in changing this custom. The substitute has to receive his credentials from the Secretary, anyway; and if the delegate signifies whom he wishes to go, the Secretary will give that person the credentials.

DR. CHARLES J. BARTLETT (New Haven): I move to amend Dr. Pratt's motion by putting in the words, "provided the appointment is approved by the Secretary."

DR. ELIAS PRATT (Torrington): I accept the amendment.

The motion, as amended, was then seconded and carried.

The report of the committee appointed to consider the recommendations in the address of the President and the reports of the Chairman of the Council and of the Committee

on Public Policy and Legislation was read by Dr. Seldom B. Overlock, the Chairman.

REPORT OF THE COMMITTEE APPOINTED TO CONSIDER THE
RECOMMENDATIONS IN THE REPORTS OF THE PRESIDENT, OF
THE CHAIRMAN OF THE COUNCIL AND OF THE COMMITTEE
ON PUBLIC POLICY AND LEGISLATION.

Mr. President and Gentlemen of the House of Delegates:

1. Report of the President:

The committee approves the recommendation that the House of Delegates pass resolutions supporting the action taken by the House of Delegates of the American Medical Association with reference to amendments to the National Food and Drugs Act.

2. Report of the Chairman of the Council:

The recommendation that the enforcement of that part of Chapter XII, Section 2, which refers to contract medical practice be postponed until January 1, 1911, is approved, with the exception that we would advise that the date be made July 1, 1911, instead of January 1, and that the Secretary of the Society be instructed to forward to every member of this Society a copy of this section of the By-Laws, together with the report of any action taken by this House of Delegates regarding it. Also we recommend that the President appoint a committee, to report at the next annual meeting, for the purpose of defining contract practice and of providing for the enforcement of this by-law.

We approve the recommendation for increasing the annual tax from three dollars to four dollars and fifty cents.

Regarding the recommendation relative to further contract for publishing the Proceedings of the Society in the *Yale Medical Journal*, we would recommend that the matter be delegated to the Council, as already provided for by Section 6 of Chapter VII of the By-Laws.

3. Report of the Committee on Public Policy and Legislation:

We approve the recommendation that the matter of drafting a resolution looking toward the establishment of a single exam-

ining board for the State of Connecticut be referred to a committee consisting of the Committee on Medical Examinations and the Committee on Public Policy and Legislation, with instructions to secure such changes in our present Medical Practice Act as shall secure one examining board for this State and shall conform as nearly as is advisable to the model act promulgated by the American Medical Association.

We also approve the recommendation that no action be taken on the resolution which provides that all births shall be reported within twenty-four hours.

We concur in the recommendation that the matter of advocating an act concerning expert medical testimony be referred to the Committee on Public Policy and Legislation, with power to act.

We recommend that the committee be instructed to take such action as they have proposed relative to the resolution calling for legal fees for reporting contagious diseases.

Respectfully submitted,

S. B. OVERLOCK,
C. J. BARTLETT,
J. B. KENT.

THE PRESIDENT: The Secretary will now read the different recommendations in the report.

The Secretary then read the first one, which was as follows: "The committee approves the recommendation that the House of Delegates pass resolutions supporting the action taken by the House of Delegates of the American Medical Association with reference to amendments to the National Food and Drugs Act."

It was moved and seconded that this recommendation be approved. Carried.

THE PRESIDENT: The Chair will appoint Dr. E. J. McKnight to draw up such a resolution. The Secretary will read the next recommendation.

THE SECRETARY: "The recommendation that the enforcement of that part of Chapter XII, Section 2, which refers to

contract practice be postponed until January 1, 1911, is approved, with the exception that the date be made July 1, 1911, instead of January 1; and that the Secretary of the Society be instructed to forward to every member of this Society a copy of this section of the By-Laws, together with the report of any action taken by this House of Delegates regarding it. Also we recommend that the President appoint a committee, to report at the next annual meeting, for the purpose of defining contract practice and of providing for the enforcement of this by-law."

DR. ELIAS PRATT (Torrington): I desire, if in order, to make a slight amendment to this recommendation. I should like to amend it by inserting after the word "this," the words "and the next," so that it would read that the Secretary should send "a copy of this section of the By-Laws, together with the report of any action taken by this and the next House of Delegates regarding it." The purpose of this amendment is that the action taken to-day and the action taken a year hence shall be included in the notice sent by the Secretary to the members. That would give them from the meeting of the next House of Delegates until July, 1911, before the by-law would become effective.

THE PRESIDENT: Then, instead of its reading, "together with any action taken by this House of Delegates," it will read, "together with any action taken by this and the next House of Delegates regarding it."

DR. EVERETT J. MCKNIGHT (Hartford): I should like to explain. A year ago, the Council of the American Medical Association appointed a committee of three to find out how many men were doing contract practice. I was on that committee, and we found that there were thirteen men doing it in Connecticut, many of them being unconscious of the existence of this by-law. It seemed to us that to enforce that by-law and drop them from the membership would be unjust; and we recommended that this matter be brought before the House of Delegates, and that the enforcement of the by-law be postponed until January 1, 1911. We thought, also, that the wording of

the by-law was incomplete, as there was no definition of contract practice. It would be difficult to act on that by-law alone, so I think that this is a very happy way out of it. Those doing contract practice can have until July 1, 1911, to get out of it.

DR. JAMES M. KENISTON (Middletown): One thing that I wish to have considered I will put in the form of a motion. I feel very strongly about this, and I know that many other men do. When we admit a man to our Society, he has to pass an examination, go before the Board of Censors and show his diploma. If the by-law forbidding contract practice is enforced, I think that when we come to act on it, it would be unfair to suspend a man without giving him an opportunity to be heard. I hope it will be so arranged, therefore, that men said to be largely engaged in that work will have a hearing given them before they are suspended. To suspend a man fixes a stigma upon him. It is different from suspension for non-payment of dues. There ought to be some official way of acting. The matter of suspending a member for this ought not to be left to the Secretary, the President, or even the Council. There should be a committee appointed to attend to the matter, at least. I hope that this will be included in our action.

DR. CHARLES J. BARTLETT (New Haven): I will second Dr. Pratt's amendment putting in the words "and the next" after "this"; but I also think that the attention of the members should be called to the by-law at once—and then again at the next meeting.

DR. THOMAS G. SLOAN (South Manchester): If contract work has been done, I do not see what advantage there is in calling the members' attention to the fact until definition of contract practice is made.

The amendment was then seconded, and a motion was made that the recommendation as amended be approved. Carried.

THE PRESIDENT: The Chair will appoint the committee that made this report: Dr. Seldom B. Overlock (Pomfret), Dr. Charles J. Bartlett (New Haven), and Dr. John B. Kent (Putnam).

THE SECRETARY: "We approve the recommendation for increasing the annual tax from three to four dollars and fifty cents."

It was moved and seconded that the recommendation be approved.

DR. FREDERICK B. WILLARD (Hartford): While I personally do not disapprove of the increase in the state tax from three dollars to four dollars and a half, I feel that we who, as secretaries, come close to the individual members of the County Associations, will find it more difficult to collect five dollars and a half, which the amount will be after adding the county tax of one dollar, than it would be to collect a round five-dollar bill. We, in Hartford County, shall have to increase our county tax; and if the state tax were four dollars instead of four dollars and a half, and we should add the county tax of one dollar, making the total five dollars, we should be able to collect all our taxes without difficulty and have very few men drop out. If you do pass the recommendation making the state tax four dollars and a half, and this difficulty occurs, you will have previously been warned in regard to it.

DR. ELIAS PRATT (Torrington): I should like to ask whether there has been any estimate made, on which the dollar and a half increase was based, as to our probable expenses during the coming year?

DR. OLIVER C. SMITH (Hartford): I conferred with Dr. Townsend, the Treasurer, and we considered the matter very carefully. We now have a deficit; and it does not seem that an increase of one dollar will be sufficient to cover this and meet the increasing expense of the *Yale Medical Journal*. When you consider that we get this journal in addition to what we have had previously—our entertainment at the state meeting and the privilege of belonging to the State Society—the amount does not seem out of the way. I think five dollars would be better than four dollars and a half; but if we raised the tax two dollars, we might have some opposition. If the Treasurer feels, however, that we can go through another year with only four dollars, I am willing.

DR. JAMES D. GOLD (Bridgeport): As Treasurer of Fairfield County, I feel that it would be easier to collect an even dollar than fifty cents. Make it five dollars, and have the county add a dollar, making the total six dollars. It would be easier to collect than five dollars and a half. Six dollars is little enough.

DR. ELIAS PRATT (Torrington): I think that we are apt to forget the great majority of our members who do not attend these meetings. As I look around and see these successful practitioners who feel that they can afford to spend a couple of days enjoying the benefits of this meeting, it seems to me that we do not think of the men who feel that they can not afford to come here. Any increase in the amount of the tax, they feel. We have a deficit of somewhere in the neighborhood of two hundred and fifty dollars. I do not think that we need to wipe this out in one year. I believe that we can safely increase our dues one dollar this year, and see how we come out. If we find next year that we cannot do the work we are doing on this amount, we can increase it again next year. I move an amendment, that we make the increase in the tax one dollar, instead of a dollar and a half, for this year. I do not believe that the successful practitioners in the larger places altogether realize the size of the income of the country practitioners.

DR. JAMES M. KENISTON (Middletown): I think that there is something to be said in favor of that. We are in debt less than thirty-three cents a member, and we really have no absolutely definite figures. We must remember that the contract must be made from year to year, as the price of the materials, etc., is raised. After having heard from Dr. Pratt and others, I should be inclined to favor this amendment. Perhaps a dollar might be sufficient; and if there is a deficit next year, we can make it up.

The amendment was seconded. The recommendation, as amended, was then on motion approved.

THE SECRETARY: The next recommendation is: "Regarding the recommendation relative to further contract for publishing

the Proceedings of the Society in the *Yale Medical Journal*, we would recommend that the matter be delegated to the Council, as already provided for by Section 6 of Chapter VII of the By-Laws." The part of the section of the By-Laws referred to is as follows: "The Council shall provide for and superintend the publication and distribution of all proceedings, transactions, and memoirs of the Society, and shall have authority to appoint an editor and such assistants as it deems necessary."

DR. ELIAS PRATT (Torrington): Does that need any action? Is not the by-law sufficient alone? We approved of the recommendation before. I move that the recommendation of the committee be adopted.

The motion was seconded and carried.

THE PRESIDENT: The next recommendation of the committee is in regard to a recommendation contained in the report of the Committee on Public Policy and Legislation.

THE SECRETARY: "We approve the recommendation that the matter of drafting a resolution looking toward the establishment of a single examining board for the State of Connecticut be referred to a committee consisting of the Committee on Medical Examinations and the Committee on Public Policy and Legislation, with instructions to secure such changes in our present Medical Practice Act as shall secure one examining board for this State, and shall conform as nearly as advisable to the model act promulgated by the American Medical Association."

DR. ELIAS PRATT (Torrington): I move the adoption of this recommendation.

The motion was seconded and carried.

THE SECRETARY: The next recommendation is: "We also approve the recommendation that no action shall be taken on the resolution which provides that all births shall be reported within twenty-four hours."

DR. ELIAS PRATT (Torrington): I move that it be adopted. The motion was seconded and carried.

THE SECRETARY: "We concur in the recommendation that the matter of advocating an act concerning expert medical

testimony be referred to the Committee on Public Policy and Legislation, with power to act."

DR. ELIAS PRATT (Torrington): I move the adoption of this recommendation.

The motion was seconded and carried.

THE SECRETARY: The last recommendation is as follows: "We recommend that the committee be instructed to take such action as they have proposed relative to the resolution calling for legal fees for reporting contagious diseases."

It was moved and seconded that this be adopted. Carried.

DR. EVERETT J. MCKNIGHT (Hartford): Yesterday I asked permission to introduce a resolution to-day with reference to the appointment of a National Department of Health. I offer the following resolution:

WHEREAS, There is now pending in Congress a bill (Owen Bill, S. 6049) to establish a Department of Health with a Secretary in the Cabinet of the President, and

WHEREAS, Among our natural resources National Health is our greatest asset, amounting on a conservative estimate to \$250,000,000,000, while the total wealth exclusive of human beings is estimated at \$107,000,000,000,* and its conservation therefore is of the most vital importance to the Nation, and

WHEREAS, The cost to the nation of sickness and death from diseases easily preventable amounts to over \$1,500,000,000,* per annum, and

WHEREAS, The United States Government has in the past been very negligent in caring for the health of its subjects and has expended more for the prevention and treatment of diseases of its domestic animals than for the same purposes in connection with the people living within its borders, and

WHEREAS, We believe that this condition of affairs has largely been due to the fact that the medical profession has not been sufficiently active in placing these matters before our lawmakers in their proper light, and

WHEREAS, We believe that better results can be obtained by a separate Department of Health rather than to continue under existing conditions; therefore be it

Resolved: That the House of Delegates of the Connecticut State Medical Society here assembled urgently request each of our Senators and Representatives in Congress to give this matter their personal attention and use their influence to secure the passage of this bill.

* Bulletin 30 of the Committee of One Hundred on National Health, p. 119.

It was moved and seconded that the resolution be adopted. Carried.

DR. ELIAS PRATT (Torrington): With reference to this resolution just passed, I wish to make a motion that the Committee on Public Policy and Legislation be instructed to use their best efforts to influence the representatives in Congress from Connecticut in favor of this proposed legislation, the so-called Owen Bill.

The motion was seconded and carried.

THE PRESIDENT: Dr. Pratt has a report to read.

DR. ELIAS PRATT (Torrington): This is in reference to the vote taken yesterday, appointing a committee to devise some plan by which the fiscal year of the State Society and of the component County Societies might be made the same. There is now a committee of the American Medical Association which has the matter in charge. It will make a report, upon which action will be taken at the next meeting of the American Medical Association; and your committee recommends that we postpone action until after the report of the committee of the American Medical Association has been presented and action taken thereon. We recommend the postponement of any action on our part, in regard to the matter, until the semiannual meeting of this Society at Middletown.

THE PRESIDENT: You have heard Dr. Pratt's report. Do you move its adoption?

It was moved and seconded that the report be adopted, and that the matter be deferred to the semiannual meeting at Middletown, in the autumn. Carried.

DR. ELIAS PRATT (Torrington): We have for years had a Committee on a Colony for Epileptics in this State. I move that the same committee of five be continued throughout the coming year. The motion was seconded and carried.

THE PRESIDENT: Is there any further business to come before the House of Delegates?

DR. SELDOM B. OVERLOCK (Pomfret): I move that the next annual meeting shall be on the fourth Wednesday and Thursday of May, 1911, and be held at Hartford.

The motion was seconded and carried.

DR. JAMES M. KENISTON (Middletown): I wish that every delegate would go home and state that Middlesex County offers every member welcome to the semiannual meeting, which we will try to make a success.

It was then moved and seconded that the House of Delegates adjourn.

Carried. Adjourned at 9.55 A. M.

The Banquet.

The annual banquet was held at the New Haven Lawn Club on Thursday evening, May 26, at 7.30 P. M. About ninety members were present. Dr. Otto G. Ramsay of New Haven acted as toastmaster. The following were the speakers:

MAYOR FRANK J. RICE,
REV. ANSON PHELPS STOKES, JR.,
DR. SAMUEL D. GILBERT,
MR. JOHN C. GALLAGHER,
MR. WILSON H. LEE.

PRESIDENT'S ADDRESS.

The President's Address.

SAMUEL D. GILBERT, M.D., NEW HAVEN.

Holmes represents Rip Van Winkle, M.D., after he had waked from his long nap of twenty years and resumed the practice of medicine, as concluding that he was no longer up-to-date, and so would go back and sleep another year. Before going, however, he addresses Dame Van Winkle as follows:

"Goodby," he faltered, "Mrs. Van, my dear!
I'm going to sleep, but wake me once a year;
I don't like bleaching in the frost and dew,
I'll take the barn, if all the same to you.
Just once a year—remember! No mistake!
Cry, 'Rip Van Winkle; time for you to wake.'
Watch for the week in May when laylocks blow,
For then the doctors meet, and I must go."¹

Again we obey the call of Spring. We come not from sleep and idleness, not from hours dreamed away in a butterfly existence like the devotees of fashionable society, but from our offices, laboratories, from the bedsides of our patients, from educational and official chairs, with the happy consciousness of hard and honest work faithfully done. We come for rest, and yet not rest which means mental torpor, but rest which comes with interchange of thought, and fresh inspiration from new and helpful ideas, quickening our aspirations and our determination to fulfill the high aims of our calling. We come also to meet each other, to grasp by the hand men who have the same love for our noble profession and who are actuated by the same high ideals and purposes. From our contact and fraternal intercourse we go back to our work with renewed strength and courage, and pride in our Society for its past

¹ Holmes—"Rip Van Winkle, M.D."

and honorable record, and for the men who, in the past and to-day, have brought honor to it by their lives.

"And let us consider one another, to provoke unto love and good works; not forsaking the assembling of ourselves together as the custom of some is."² Strength, courage and efficiency come from regular attendance at state, county and city meetings, and unfortunate is the man who does not realize this to be true. There are men, members of this Society, who hold themselves aloof from their brethren in their own towns, not to mention absenting themselves from all medical gatherings. They live little known by their neighbors in the profession, with no intimate friends, and except for medical literature and study of their own cases, lose much that is stimulating and elevating in a doctor's life, and strength gained by association.

In looking over the titles of the addresses of gentlemen who have preceded me in the presidential office, to which by your kindness, however undeserved, I have been called, it seemed to me that we might well spend a short time in considering ideals in medicine. Ideals are the evidences of some of the first mental acts which the human being experiences. The wish for perfection is born in us. The child regards its toys and means of amusement as the objects most to be desired, and they constitute its first ideals, and as time goes on other standards of perfection are chosen, and so progress is made, from childhood to manhood, until the conception of something always better and finer leads man up to the very pinnacle of perfection. God, having planted this mental conception in us, and having created man and led him up to such a mountain top, would not then have him step off into nothingness. This constitutes one of the strongest reasons for belief in the immortality of the soul. God would not destroy what He Himself has made and perfected. Ideals, beginning so early in life, are thus the stepping-stones by which all men who have attained true success have found their way. Philosophers, statesmen, scientists, discoverers, the leading men

² Hebrews, x, 24 and 25.

in Law, Medicine and Theology, successful men in all walks of life have been men of ideals, and in proportion as they have attained their ideals have they helped to elevate their fellows.

"There are men and classes of men that stand above the common herd; the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarelier still, the clergyman; the physician almost as a rule. He is the flower (such as it is) of civilization; and when that stage of man is done with, and only to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Heraclean cheerfulness and courage, so that he brings air and cheer into the sick room, and often enough, though not so often as he wishes, brings healing."³ Thus wrote the keen observer, Stevenson. Perhaps you may think this praise extravagant, particularly when he speaks of the physician as the flower of our civilization; but after all, is there any person who touches man at so many points, because he comes to know him so intimately, and can minister to him in so many ways and in such different circumstances? Is there anyone who by education, by habits of thought and observation, and by sincere sympathy can do so much for mankind? Is it not worth while, then, to consider the doctor's ideals? What are his ideas of perfection? What are his aims to-day, and what have they been in the past? These have always been shaped and moulded to a great extent by the environment of their possessors, the period in which they have lived, the social conditions existing, the great movements in which they became more or less involved, and the general moral and intellectual atmosphere which they breathed. There have always been great physicians in every age, every century, from

³Robert Louis Stevenson—Preface to "Underwoods."

the time of Hippocrates down to the present, whose trend of thought, whose ideals have been so influenced.

Hippocrates lived in a "period of intellectual development, and it only needed a powerful mind like his to bring upon medicine the same influences which were at work in other sciences"⁴ and departments of thought. One of his ideals was the mastery of metaphysics, so as to prepare himself for a large general knowledge of his special pursuit by the study of the mind and mental philosophy, the psychology of the present day. It is hardly to be supposed, however, that if he had been born in Boston in recent years, instead of in Cos, he would have embraced the Emmanuel movement; or that he believed that the priests of his native town could minister to bodily ills or a mind diseased with more ability than the physician.

Another influence which caused Hippocrates perhaps to write the oath and law which bear his name was the fact that guilds were common in his day, and the doctor's guild or brotherhood was one. Hence the oath, some precepts of which all physicians should subscribe to in spirit.

The ideal of the Greek physician was perfection in the knowledge of the Art of Medicine, which had a triple relationship with Science, Gymnastics and Theology. "The love of art, the love of science, the love of freedom vitally correlated together and brought into organic union were the essential attributes of the Greek genius."⁵ It would seem as if the degenerate condition of medicine as a profession in the second century of the Christian era may have been the cause of Galen's rise as a scientific physician. At all events, it must have acted as a negative stimulant. In place of a class of physicians who practiced along rational or legitimate lines, there appeared great numbers of specialists, most of them charlatans, who pretended to possess supernatural insight into the methods of treating disease, educated quacks like Eli Perkins, the inventor

⁴ Encyclopedia Britannica—Article on Hippocrates.

⁵ Osler—"British Medicine in Greater Britain," page 172.

of the tractors, and the Indian doctors and impostors of our own day.

When Galen appeared on the scene, naturally enough his ideal was to see medicine as a science elevated, and attain the high position in the world of which he was the great exponent of that period. He certainly succeeded in placing himself, as well as his science, on high ground, for Emperor Marcus Aurelius said of Galen, "We have only one doctor and that an honest one,"⁶ and described him as the first of physicians and the only philosopher.

Before the advent of Harvey, medical men had been puzzling over the heart and the blood vessels, and it was natural that his ideal was to solve the mysterious mechanism, natural to a man who had such a keenness in the observation of facts. Jenner's ideal was scientific observation, in which he had served a long apprenticeship under the great John Hunter, and he came on the world's stage when every effort had been made by medication and direct inoculation to check the ever present scourge which swept now and then over the earth, "and year by year claimed one-tenth of all the beings in Christendom as its average quota of victims. From smallpox and love but few remain free, ran the old saw. A pitted face was almost as much a matter of course a hundred years ago as a smooth one is to-day."⁷ I must not prolong this train of thought, however. Morton, Simpson, Lister, Pasteur, Koch, Behring, Reed and others were in their ideals influenced by the demands of the day and by circumstances, as well as general scientific aims.

In the beginning of the nineteenth century, the clergyman, doctor and lawyer were the most prominent men in a New England town, and the doctor's position was second to none. He was not only a medical man, whose dictum in matters pertaining to bodily ills was unquestioned, but with the other two professions, was interested in education, and in questions which involved the welfare of the public. The young man who

⁶ Henry Smith Williams—"A History of Science," vol. i, page 280.

⁷ Ibid., vol. iv, page 197.

then entered upon the career of medicine read with some able man of his day as preceptor, and this was the custom up to forty years ago. The candidate for a degree in medicine at Yale in 1871 was required to present a certificate from a reputable practitioner that the student had studied with him and had made a satisfactory showing in his studies. To-day the student may have a preceptor or quiz master, but it is not a requirement for graduation.

In my opinion, much is lost in the formation of medical character and ideals by this change. The choice of reading with personal explanation and illustration by cases in a preceptor's experience have a different flavor from knowledge gained in lecture halls or hospitals. The personal influence and example of an able man cannot be overestimated. Hospital clinics and instruction are most valuable, and it is a great advance over the conditions existing a century ago that now the opportunities are so numerous for such instruction and so accessible, but nothing can take the place of the old relation between the doctor and his student, the intimate and paternal relation; and seeing a patient with your preceptor was more likely to make you realize that he was a human being and not the interesting case in Bed No. 5. The student absorbed much of his preceptor's knowledge and was his disciple. He was imbued with a sense of the greatness of his calling, of the brotherhood into which he was about to enter, and these were and should be some of the first ideals to-day. He meant to be a successful doctor, like his master, and fill with honor the position which he might achieve, and to benefit humanity; but the profession itself as an ideal was very prominent in his mind, and it was from such a beginning that many a man in our commonwealth rose to eminence, whose life and example are worthy of study and imitation by us all.

The ideal of the greatness of the doctor's vocation was so ably expressed by Sir James Simpson that I may be pardoned if I quote it at some length. "Other pursuits become insignificant in their objects when placed in contrast with ours. The agriculturist bestows all his professional care and study

on the rearing of crops and cattle; the merchant spends his energies and attention on his goods and his commissions; the engineer upon his iron wheels and rails; the sailor upon his ships and freights; the banker upon his bills and his bonds; and the manufacturer upon his spindles and their products. But what after all are machinery and merchandise, shares and stocks, consols and prices-current, or the rates of cargoes and cattle, of corns and cottons, in comparison with the inestimable value and importance of the very lives of these fellowmen who everywhere move and speak and act around us? What are any or what are all these objects when contrasted with the most precious gift of God—human life?"⁸

The brotherhood of the medical profession is supposed to be a principle of our code of ethics. How is it in reality? A spirit of sharp rivalry is occasionally seen, and, in some instances, a tendency to sharp dealing. It seems at times as if we witness an inclination toward the practice not of the Golden Rule, but of David Harum's precept, "Do unto the other fellow as he would like to do to you, but do it fust." Honest competition is necessarily active in our day, and in the rush and whirl which prevail in the business world it is not strange if the complaint is catching, but it will be a sad day and a forerunner of the degeneration of medicine into a trade if this spirit grows in strength.

How shall the ideal of brotherliness be cultivated or regained, if lost? This brings up the question of medical ethics and doctors' disagreements. Attendance at county, city and state meetings, with papers and discussions, promotes knowledge, but more than that, friendliness. I believe that even in a group of three or four country towns, with the aid of telephones and automobiles, the medical men of the neighborhood might occasionally during the summer months dine with one another and so get closely acquainted. In regard to misunderstandings between men, or fancied slights, which are sometimes nursed until a hot flame is produced; if the sun is not allowed to go down on one's wrath, but the doctor

⁸ Sir James Simpson—"H. Laing Gordon," page 48.

apparently in the wrong has been called on at once, the whole trouble may vanish into thin air, and a strong and lasting friendship cemented. Breaking bread with your erring brother is a potent remedy, for the ladies say that the way to a man's heart is through his stomach. The third ideal is service to mankind. What is there more ennobling than the motto *Pro Bono Publico*? We have no secrets. The great discoveries in the prevention, treatment and cure of disease have all been made at the expense of our pockets from the days of Jenner and vaccination down to the latest preventive vaccine for scarlet fever. There is no calling or business which deliberately labors to its own financial injury in a way, that the public may gain thereby, except the medical profession, and this unselfishness is our glory.

This brings up the relation of the doctor to the public. We live in a very practical age and are judged by results. Many of our lay brethren think that the physician assumes the air of a superior being, and believes himself endowed with supernatural knowledge that has come filtering down through the mist of ages, and the public asks the question, What manner of man is this who arrogates to himself such superior learning? The earnest man who takes up his life work begins with all the high ideals and motives of the profession, ready to promote the public welfare. He is disappointed when his motives are misunderstood and perhaps subjected to ridicule, and he wonders if he really cares much for humanity as a whole, and may even at times be tempted to feel an appreciative sense of the supposed attitude of some corporations toward the public. He feels that after all the only true satisfaction in a physician's calling is gotten from doing his work to the best of his ability and in the study of medicine as a science. This is particularly apt to be the case to-day when the family physician is thought by some to be a superfluity, soon to be as extinct as the great auk, for specialists are seizing upon every organ of the body as their private property.

The public, however, is in error here, for, instead of the family physician of the past century, is coming the great general

practitioner with all the light which modern study and learning can give—the flower of the profession. But to return: Is this spirit which would abandon our highest ideals worthy of the high prize in the calling which we have set before us? If we would prove ourselves great, and the “flower of civilization,” as Stevenson said we are, shall we be daunted by such discouragements?—and if we do permit ourselves to entertain this feeling, the public will soon find out our lack of real interest and love for humanity and we shall find the scope of our influence narrowed.

The great ideals in serving mankind are helpfulness and the bringing of peace, as Dr. Wagoner, President of the Pennsylvania State Society, said in his annual address last autumn. To quote from this admirable discourse: “If, in ordinary active practice, we are more interested in watching and noting the phenomena of diseases than in securing the comfort of the patient, and in the prolongation of his life, then are we missing the true object of our science and art, which is helpfulness. If we attempt to prove theories in the application of remedies while our patients linger in uncertainty and disability, then do we fail in helpfulness. If we clash over the minute and technical measures while neglecting the fundamental means of renewing life and health, we fail to be helpful.”⁹ What the patient wants is to be helped, to be cured of the disease, and not to furnish an interesting case for speculation, and what the public wants to-day is an old-fashioned bedside doctor. It wants a man thoroughly equipped with all modern methods of diagnosis and treatment, and all the efficiency secured by the best education, but the man sick with pneumonia, appendicitis, or any acute disease is not much benefited or quieted mentally by too minute examination, and does not see any practical advantage to be derived from a half hour investigation into the physical and mental characteristics of his great-grandparents. What he wishes is to be helped.

Our hold on the public is measured by the degree in which we are helpful, and as we are bringers of peace—bringers of

⁹ Wagoner—Presidential Address.

peace to the sufferer stretched on a bed of pain and nervous tension, to the anxious family whose thoughts and hopes are centered on the doctor's every word and direction, the doctor who is a tower of strength to him whose life hangs in the balance, and to the wife and children whose husband and father may soon leave them.

"Of all the ills that suffering man endures,
The largest fraction liberal Nature cures;
Of those remaining, 'tis the smallest part
Yields to the efforts of judicious Art;
But simple kindness, kneeling by the bed
To shift the pillow for the sick man's head,
Give the fresh draught to cool the lips that burn,
Fan the hot brow, the weary frame to turn,
Kindness, untutored by our grave M.D.'s,
But Nature's graduate, when she schools to please,
Wins back more sufferers with her voice and smile
Than all the trumpery in the druggist's pile.
And last, not least, in each perplexing case,
Learn the sweet magic of a cheerful face;
Not always smiling, but at least serene,
When grief and anguish cloud the anxious scene.
Each look, each movement, every word and tone,
Should tell your patient you are all his own;
Not the mere artist purchased to attend,
But the warm, ready self-forgetting friend
Whose genial visit in itself combines
The best of cordials, tonics, anodynes."¹⁰

Never in the history of modern times can the doctor who is a bringer of peace so endear himself to the public and help it as now. The reason is not far to seek. It is an age of tension, a period of worry. Men live faster in an hour to-day than in a month fifty years ago. They are continually on edge, and the wise, tactful doctor and friend can do perhaps more to bring calm and peace than the clergyman, because he reaches the innermost recesses of a man's heart more than anyone else. The family physician is the trusted adviser and

¹⁰ Holmes—"The Morning Visit."

repository of secrets. The doctor who has such a personality that he can bring courage and hope into dejected and despairing hearts, and belief that he is going to save and deliver from impending death, has one of the most important and valuable qualifications for a physician; but he that, perhaps as a result of these characteristics, is a bringer of peace, is a man of power, whose ability to do for his patients is almost unlimited.

In concluding what I would say of our relations to the public, I would like to speak of the ethics of our charges. We have recently seen a notable example of a brilliant man in the legal profession giving up the opportunity of making a very large income that he may serve his country on the Supreme Bench. Are the specialists and great surgeons of the metropolitan centers actuated by the highest ideals in medicine when they sometimes charge almost prohibitive prices for their services? May they not be accused of making a trade of their calling? In an article published this month entitled "Governor Hughes' Attitude toward Professional Rewards. Its contrast to the Present Trend in Society," ex-President Tucker of Dartmouth College says: "Medicine seems to be one of the closed professions owing to the stringent rule which forbids any personal profit from a medical discovery or invention. But medicine, even with this fine restriction, and with its splendid personal contribution to science and charity, is often made exceedingly remunerative through the extraordinary fees of specialists, and through the charges frequently inflicted upon rich patients. The ethics of medical fees and charges has not yet been very clearly established."¹¹ Are not such men in the profession for what they can make, not for any opportunity to do good? It is related of Dr. Eli Ives of New Haven, who practiced seventy-five years ago, that once he asked a noted New York physician who came to New Haven in consultation, "What are you going to charge?" The doctor replied, naming an exorbitant sum and apologetically saying, "I must live, you know." Dr. Ives replied, "Yes, and you must die, too."

¹¹ *The Congregationalist*—May 7, 1910.

Ideals in medicine differ at the different periods of life. The ideals of a young man just out of the medical school and hospital are largely influenced by his environment. He has put out his shingle, and, as Holmes said, "Behind the pane of plate glass which bore his name and title, burned a modest lamp, signifying to the passers-by that at all hours of the night the slightest favors (or fevers) were welcome."¹² He is without means, and perhaps even in debt for his education. Money is a necessity, but let him beware lest this become an ideal. Its acquisition should only furnish a stepping-stone to the attainment of the highest ideals—helpfulness and service to mankind. Some young men have other ideals beside the commercial side of medicine and are lost in the contemplation of the wonderful mechanism which is our field of work, the human body, and the mind which animates and controls it; some wish to use their calling as a path to social standing, others with Sphinx-like faces and assumed dignity hope by such a travesty to pass as wise and profound men in their day and generation. All these misrepresent by their lives the true ideal of medicine, which is helpfulness.

A young man's ideals are influenced by opportunity, as was the case with the youth who was born in Lebanon in this State on the twenty-first of November, 1785. His son says of him: "Prompted by a spirit of independence and adventure in the 22nd year of his age, he left during the winter the paternal roof to seek a fortune and a name. His outfit consisted of one hundred dollars of hard earned money, a horse and cutter, and a barrel of cider. With this he started, laying his course northwardly" (let us hope it was a direct one) "without any particular destination."¹³ The old adage recurs to us, "There's a divinity that shapes our ends, rough-hew them how we will,"¹⁴ for on June 6, 1822, an accident to Alexis St. Martin and the opportunity which came to William Beaumont made the study of physiology and stomach digestion his ideal. To

¹² John T. Morse, Jr.—"Oliver Wendell Holmes, Life and Letters," page 157.

¹³ Osler—"A Backwood Physiologist," page 178.

¹⁴ Hamlet—Act V, Sc. 2.

appreciate the value of Dr. Beaumont's discovery we have only to recall that previous to 1832, when his book was published, there were five theories of stomach digestion, viz: concoction, putrefaction, trituration, fermentation and maceration; and William Hunter said, apropos of the knowledge of that day, "Some physiologists will have it that the stomach is a mill, others that it is a fermenting vat, others again that it is a stewpan; but in my view of the matter, it is neither a mill, a fermenting vat, nor a stewpan; but a stomach, gentlemen, a stomach."¹⁵

Osler says: "Beaumont is the pioneer physiologist of this country, the first to make an important and enduring contribution to this science. His work remains a model of patient, persevering investigation, experiment and research, and the highest praise we can give him is to say that he lived up to and fulfilled the ideals with which he set out, and which he expressed when he said: 'Truth, like beauty, is "when unadorned, adorned the most," and in prosecuting these experiments and inquiries, I believe I have been guided by its light.'"¹⁶

What are the ideals of middle life? At this period, if the doctor has practiced what Osler calls the master word in medicine, viz: Work, he has usually acquired a competence. He has lived long enough to find that money, position, popularity do not bring the greatest happiness and reward, but that as he is able to bring strength and succor to those who need help, comfort to those who are harassed by anxiety, and by work and experience he has added to the discoveries and greatness of the science of medicine, he has found the highest ideal, the summum bonum in the elevation and service of his day and generation.

There is a type of ideals of which there are rare instances in middle life—one of the highest, perhaps, but few have it—that of the man who accepts and practices the spirit of one of the hardest sayings of the Gospel, "He that loveth father

¹⁵ Osler—"A Backwood Physiologist," page 173.

¹⁶ Ibid., page 185.

or mother or son or daughter more than Me is not worthy of Me." Such a man was Dr. John Y. Bassett of Huntsville, Alabama, whom Osler immortalizes under the title of an "Alabama Student." He died April 16, 1851. When he was nearing middle life he forsook all, his wife and children, and, though charged with desertion of his loved ones, responded to the call of his ideal and went abroad for a year to study. Going abroad for a year seventy-four years ago and leaving a family when a father's aid and guidance was so much needed was a different matter from to-day when transatlantic steamships cross in a little more than four and a half days. There are few to-day who would be obedient to such a call, that they might give up everything for the ideal of the study of medicine itself. This, however, Bassett did, that he might sit at the feet of Velpeau, Andral and Broussais. His ideal is, however, so beautifully expressed that it should be preserved. He says:

"I do not say that the study of nature, human and comparative, as far as it relates to medicine, is an easy task; let anyone undertake a foreign language, and when he thinks he has mastered it, let him go into its native country and attempt to use it among the polite and well-informed; if he succeed, let him go among the illiterate and rude, where slang is current; into the lunatic asylum, where the vernacular is babbled in broken sentences through the mouth of an idiot, and attempt to understand this; should he again succeed, he may safely say that he knows that language. Let him then set down and calculate the cost, in labor, time and talent; then square this amount and go boldly into the study of physiology; and when he has exhausted his programme, he will find himself humbly knocking at the door of the temple, and it will be opened; for diligence like the vinegar of Hannibal will make a way through frozen Alps; it is the open sesame of our profession. When he is satisfied, he will be led to his ultimate object, to take his last lessons from the poor and suffering, into the pest houses and prisons, and here in these magazines of misery and contagion, these Babels of disease and sin, he must not only take up his abode, but following the example of

his Divine Master, he must love to dwell there; this is pathology. When such an one re-enters the world, he is a physician; his vast labors have not only taught him how little he knows, but that he knows this little well."¹⁷

One of the saddest memories of men is of those who never are known in the world of science and letters, men who are painstaking, faithful searchers after knowledge and of rare ability, men whom Holmes speaks of as those "who never sing, but die with all their music in them."¹⁸ A perusal of Osler's sketch of Bassett's life will show him to have been a remarkable man and physician, but the environment and opportunity for work did not contribute to make him famous. He did, however, strive, make an effort, was true to his high ideals, and this is worth the struggle. The men for whom he left home and friends that he might sit at their feet and learn the best things in medicine are gone, and so is he, and so will go the rest of the men who have served mankind in their day, but who can measure the value or influence of a life faithfully lived? Now and then someone achieves greatness, but for the rest, "no one asks who or what we have been, more than he asks what waves, in the moonlit solitudes mild, of the midmost ocean, have swelled, foamed for a moment and gone."¹⁹

There have been many heroes in our ranks, but one of the noblest to-day practices on the shores of bleak Labrador, a man with the highest ideals of his profession. In May, 1907, for the first time in its history, the University of Oxford conferred upon him the honorary degree in medicine. This was the address:

"Most Noble Vice-Chancellor and You, Eminent Proctors:

"A citizen of Britain is before you, once a student in this University, now better known to the people of the New World than to our own. This is the man who fifteen years ago went to the Coast of Labrador to succor with medical aid

¹⁷ Osler—"An Alabama Student," pages 16-17.

¹⁸ Holmes—"The Voiceless."

¹⁹ Osler—"An Alabama Student," page 18.

the solitary fisherman of the northern sea; in executing which service he despised the perils of the ocean, which are there most terrible, in order to bring comfort and light to the wretched and sorrowing. Thus up to the measure of human ability he seems to follow, if it is right to say it of anyone, in the footsteps of Christ Himself, as a truly Christian man. Rightly then we praise him, by whose praise not he alone, but our University also is honored. I present to you Wilfred Thomason Grenfell, that he may be admitted to the degree of Doctor of Medicine, *Honoris Causa*."²⁰

On Easter Monday, 1908, northern Newfoundland was still in the grip of winter. Everything was snow and ice. Grenfell received word that a large team of dogs had come from sixty miles to the southward for a doctor on a very urgent case. It was that of a young man on whom the doctor had operated two weeks before for acute bone disease of the femur. The news was that the wound had become septic. No time was to be lost, and so with his dog team he started. The next morning he was discovered miles off the coast afloat on a cake of ice with five dogs, helpless and drifting out of sight. What was the cause of his plight? The ice which he was crossing the previous day had separated and left him on an ice pan, floating out to sea with little chance of rescue. As the day drew on and he saw that he must try to live through the night, he had to kill three of his eight dogs that he might have their skins to wrap about his body for warmth; and then, lying down with his arms about another, he managed to keep from freezing till morning.

You know the story—how he was seen and rescued at the peril of their own lives by the fishermen who loved him, and yet, as soon as he reached the shore, started off with a fresh team of dogs to save his patient. Why does this doctor live this hard life? Because he is governed by the highest ideals of our profession, love for humanity, and a desire to serve as did Christ his Master, who ministered to body and soul, and

²⁰ Wilfred T. Grenfell—"Afloat on an Ice Pan," xi.

saved not only from disease but from sin. What does Wilfred Grenfell say life means to him?

"It means a chance for everyone to be helping lame dogs over stiles, a chance to be cheering and helping to bear the burdens of others, a field for the translation of unfailing faith in the love of God above into deeds that shall please His children below, and therefore please Him also, filling this poor life with satisfaction, otherwise unattainable."²¹

What does he say is his ambition?

"I personally wish for the life of no Alexander, Cæsar, or Napoleon; no Cræsus or Midas, no Voltaire or Rousseau. The wealth of Herod or the learning of the Pharisees, after the lapse of centuries, I see clearly was of relatively little value, as He-who-knows counts assets. I would rather leave behind me on the sands of time the footsteps of a Judson or a Martyn or a Livingstone, of a Gordon or a Lincoln or a Lawrence, of a Lister or a Jenner or a Stevenson than of any king, either of men, of finance or of scholarship. Who would not be proud if posterity should accord him this tribute, that his life had been a reincarnation of Jesus Christ's."²²

Surely Wilfred Grenfell did not set his standard too high, for if the life of the physician is to carry out the highest ideals, it is found in the life of Him who "went about doing good."

What does life mean to the old man, and what are his ideals? You have read the "Master of the Inn." You remember how tired men, business men and scientists, physicians and surgeons, those who had been worsted in the stress and battle of life, all came to the Master, and the old doctor confessed them, heard patiently their histories, their tales of the trials and troubles of life; and then the good physician, after they had unburdened their hearts to him, by a wise and guiding hand led the tired men by Nature's paths and soothing streams, cured both soul and body, and sent them back into the world again; the great metropolitan surgeon who came because his brain and hand refused to work, back with steady nerve and clear brain to

²¹ Wilfred T. Grenfell—"What Life Means to Me," page 13.

²² *Ibid.*, page 27.

his brilliant and beneficent life; the business man to his work again, the worn-out husband to his family. The Master did all this without thought of pay.

You may say this is a fanciful picture. True; but does it not illustrate the greatest and highest ideals of life, helpfulness and bringing of peace and the uplifting of humanity, and that, too, without seeking money for money's sake; for if a man has been diligent in his work, faithful to his patients, he will not lack support. Whether he be a great surgeon or physician, or an obscure country doctor who has lived and grown old among the people of his little village, in proportion as he has lived such a life he will have carried out the highest ideals of our calling, the noblest in the world, the life of an earnest, God-fearing physician and lover of humanity.

For the old man, the strenuous life is over. He may still achieve and contribute to medical science and do good work, as do those of our own Society to-day, whom we honor. The little things of life are past, and he looks back upon his life and the great ideals of medicine, those which I have mentioned, the profession itself, the brotherhood, service to mankind and the Divine Master of us all. If he has been successful as the world counts success, he is surrounded by troops of friends; if he has not, nor been prominent, but has lived in comparative obscurity, inasmuch as he has faithfully lived up to his highest ideals, has he been true to himself, has he achieved true success. "As a man thinketh in his heart, so is he."²³

²³ Proverbs, xxiii, 7.

PAPERS ON SPECIAL
SUBJECTS.

The Diagnosis of Insanity.

HOW CAN THE GENERAL PRACTITIONER DETERMINE, DEMONSTRATE, AND CERTIFY THE EXISTENCE OF MENTAL DISEASE IN A GIVEN INDIVIDUAL ALLEGED TO BE INSANE?

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In a sense, it is impossible to define insanity and the term is here used simply as a concession to medico-legal custom. In fact, we have to do with men and women who suffer from a psychosis—with people—individuals—who are sick. In man mind, body and soul are “one and inseparable” as far as this life is concerned. “The Lord formed man and breathed into his nostrils the breath of life; and man became a living soul.”

In any diagnosis one depends to a large extent on localization of symptoms—the lungs in pneumonia, the throat in diphtheria, the skin in variola, focal lesions of the cord and brain in paralyzes, and so on; nevertheless, we should fail lamentably if we did not recognize *general* symptoms also. So, too, in cases of insanity, one localizes, purely for convenience, the *mental* symptoms; but a diagnosis will never be complete or accurate unless one takes into account the physical symptoms also, as well as the morals and conduct, which are “nine-tenths of life” and a very large part of religion.

In determining the existence of insanity, or a psychosis, the examiner should pursue a *systematic* course. Hence one should get as complete history as possible:

1. Of patient's family, on both sides, direct and collateral branches, as far back as possible; the presence of insanity, epilepsy, neuroses, alcohol and drug habits; age at and cause of death, general character of family as regards intellect, morals and physique.

2. Of the patient—his early development, all diseases of childhood and maturity; his aptitude for study and work; his education, religion, disposition, temper and temperament, habits and customs; the nature of his environment and occupation; in a word, just the kind of person he was before the onset of the psychosis. It is of great importance to know if he had any specific disease, or was an alcohol or drug habitue.

Whatever classification of the psychoses we may adopt, we know of no method of mental analysis simpler, clearer, and more satisfactory than that of Kraepelin. Following him, we divide the mind into the following, viz: Perception, apperception, attention, memory, orientation; train of thought, judgment, emotions, and volition. We include delusions under judgment, the morals under emotions, and conduct (action) under volition. Those divisions are purely arbitrary—many, if not all mental processes are interdependent, coöperative, and so rapidly associated as to appear almost if not quite simultaneous. All mental processes depend upon and are modified by stimuli, which may be external or internal (relation to the outer world and to self), and they also depend upon many and complex conditions (cell actions, functions, etc.) for their normal activity.

Normally, a man perceives what goes on in and about himself; his senses, special and general, function correctly and he is free from illusions and hallucinations. Freedom and integrity of perception depend on the power of attention, on the impressibility and retentiveness of memory, on coherent associations of ideas, and on sound judgment, and these all may be and are often swayed by strong emotions, or perversions of will. Hence we should first of all find out just what our patient sees, or hears, or feels, or smells. Are things really what they seem to him? Has he any hallucinations, and if so, what? Often patients conceal their hallucinations, especially before strangers or in a new environment. One can sometimes judge by their conduct and manner—their postures and gestures, a listening attitude, moving of lips as if in reply,

a fixed, earnest or rapt gaze, or the wearing of head and body protectors, etc. Sooner or later, hallucinations, if present, will reveal themselves. When present they are of serious import. "It must be remembered that there is great danger of mistaking for hallucinations *actual perceptions* which are peculiarly apprehended and recurrent (Illusions.)"¹. In early childhood percepts are always single—an orange is round, or yellow, or sweet. At maturity the word stands for a host of percepts, all grasped at once.

Apperception is simply a grouping of percepts into concepts, and an immense number of these become in time as automatic as walking or breathing. In mental disease, many concepts are dislocated, dissociated, or perverted; patients may be partially or wholly disoriented for time, place and person. Consciousness is more or less clouded. Under this head we should note the extent to which the patient can *fix his attention*, since the stability of his perception, apperception, memory, and ideation depends upon it.

Disturbances of memory are next to be noted. Is memory impaired for recent or remote events, or both? Inquire into the special memories accumulated by the patient's occupation. A lawyer may have one set of memories specially developed, a broker another, a telephone operator another, and so on. At the beginning it is best to ask the patient to give as full and exact history of his past life as possible, including dates of birth, marriage, illness, schooling, occupation, etc. This narration will often reveal much of value along other lines. In testing for retentiveness and impressibility make due allowance for the education of patients. Accuracy and fabrications will be determined by cross-questions and comparison with the history furnished by friends. Fabrications are easily observed, as patients who fabricate usually talk freely of their own accord.

Disturbances of the train of thought will often have been exhibited and noted during the tests of perception, appercep-

¹ Kraepelin.

tion, and memory, but we now should record them in their proper sequence. Some of the important symptoms are flightiness, circumstantiality, desultoriness, retardation, paralysis, simple persistent ideas, compulsive ideas, narrowness.

A brief description of these disturbances is desirable, to facilitate, if possible, the clue to the patient's associations of ideas.

In flightiness (flight of ideas) the goal ideas change rapidly—the successive links in any given chain of thought presenting the most astonishing and varied changes of direction. Here, too, we often find rhyming and sound associations, as “bell,” “dell,” “well,” etc.

In circumstantiality the goal is reached after many delays, due to the insertion of numerous and often unimportant details. Patients “go around Robin Hood's barn.”

In desultoriness there is a complete absence of goal ideas—each idea or sentence standing alone, having no connection with the preceding or following ideas.

In retardation there is great slowness and difficulty and even pain in thinking and in the expression of thought.

In paralysis of thought there is a partial or complete suspension of all intellectual activities—an absence of association—the store of ideas becoming progressively more limited. (Mental bankruptcy.)

Simple persistent and compulsive ideas need no description.

Disturbances of ideation are among the most important symptoms of mental disorders, as normal thought is based on clearness and accuracy of perception, on the vividness and correctness of concepts, on the ability to fix and concentrate the attention, on a memory where impressibility and retentiveness coöperate and where the emotions are under control.

These disturbances are often difficult to elicit or recognize, as might be expected. We are usually compelled to judge of the content of thought and its vagaries by the conduct, manner, and casual speeches of the patient, inspection of his letters and other writings, and by direct and indirect questions.

Sane men are often not frank, and the insane are frequently taciturn, or even mute.

Disturbances of judgment. Judgment is the loftiest and most complicated of the mental faculties. It is based on the preliminary work of perception, apperception, memory, and ideation, and hence impairment of any or all of these must disturb or impair the final conclusions formulated by judgment and reasoning. Judgment is modified by inadequate mental and moral development, by superstitions, by political, religious and social convictions, by lack of emotional control, by self-interest and prejudice, by anger, jealousy, envy, self-conceit, and narrowness of mind, even in sane people—much more so in disease. Judgment—which is also conscience—correlates, administers, and fixes every fact of experience and thus directs our course. It shows us the true relations of life, points us to the right paths, enables us to use all our forces—mental, moral, and physical—in the most efficient way, and preserves us from error.

Hence disturbances of judgment are very significant. One can test the patient's judgment in a *general way* by submitting to him various questions or problems concerning proper conduct, morality, business, everyday commonplace affairs, etc. Then endeavor to ascertain the presence of delusions, which may be described "as morbidly falsified beliefs which cannot be corrected by argument, persuasion, coercion or experience." Delusions are by no means *always present*, nor are they *always* or *necessarily* indicative of insanity. They are nevertheless *very important* symptoms.

Delusions may be pleasant or unpleasant, depressive or expansive. Among the expansive delusions are those of wealth, power, station, influence, change of personality, mental and physical soundness and superiority. (Great prophets, kings, poets, statesmen, inventors, soldiers, lawyers, healers, strong men, etc.)

Among the depressive delusions are those of persecution (these of every conceivable kind), misfortunes (impending

calamity, loss, disease, pains), of reference (everything said or done by others refers to them), nihilistic delusions (nothing exists, there is no God, no hope, no world, no one is living, no heart, no stomach, etc.), of sinning (very wicked, eternally lost), somatic delusions (which are sometimes not unpleasant), delusions of jealousy, fear, infidelity—the number is infinite. Somatic delusions are false ideas connected with any part of the body.

Delusions may be permanent, transient, changeable, systematized—centering about some one object or group of objects, and connected logically with some cause, which may be imaginary, or again due to a real occurrence falsely interpreted;—or unsystematized, there being no apparent connection between separate delusions.

Emotions are either pleasant or unpleasant—joy, hope, courage, love, contentment on the one hand, and sorrow, despair, fear, hatred, discontent on the other. When under control, emotions brighten life and enhance its satisfaction. When unbalanced, either by increase or decrease of normal intensity, they often dominate or override the other mental faculties and cause mental shipwreck. Judgment then becomes biased, thought is less clear, and the will is weakened or perverted. In disease we must note any increase or decrease in emotional reaction—the persistence of markedly accentuated emotions, or the lack of correspondence between the cause and the resultant feeling. Blunting of the emotions—indifference—is an unfavorable symptom. So also is dislocation of the proper emotions—joy or satisfaction where the reverse would be normal. For example, a patient returning from the funeral of his mother said: "I have had a lovely time."

Under emotions we can conveniently study the disturbances of general (bodily) feelings, as absence of the feeling of hunger, thirst, nausea, fatigue, pain, which often cannot be traced to any physiological or pathological cause, but are apparently purely cerebral (mental); and also perversions of the natural appetites and feelings; sexual perversions, etc.,

all of which have an underlying emotional basis. Here, also, in our examination of the supposedly unbalanced individual, we should study his morals. Does he comprehend fully and adequately the moral standards of to-day? Simply to ascertain if he knows right from wrong, the nature of a criminal act, if a given weapon used in a certain way will cause death, or if theft and arson and rape are wicked and criminal—this is not *enough*. All but idiots, or completely demented individuals, know as much. We should in addition ascertain if the individual has lost, wholly or in part, the finer feelings, special and general, which modern civilization has evolved and society demands. Exaggerated egoism, selfish disregard for or indifference to the welfare of others, harshness and cruelty, lack of ordinary courtesy as well as voluntary acts of impoliteness, bad table manners, greediness, vulgar and even obscene acts, disregard of propriety, slackness in care of person and attire—these and many more instances might be cited as in a manner belonging to the sphere of *morals*. Hence the behavior of the man in his daily life, in everyday matters, in the bosom of his family as well as the public eye, must be investigated. In a word, are the emotions controlled by judgment, or not?

Disturbances of volitions (will). The full fruition of a *volition* depends immediately on an antecedent *idea*: i.e., the *idea* of a definite *aim* or *act*. Actions performed *without* any precedent idea are *not* volitional but *reflex*. The *idea* of the act is accompanied by feelings which transform themselves into *impulses* for the attainment of that aim. These impulses lead to actions whose *direction* is determined by the content of the idea, while the strength and duration of actions are prescribed and regulated by the *intensity* and *duration* of the associated *feelings*.

We can fairly place the will at the apex of the mental pyramid. Without the will, or with a disordered will, our acts become ineffective—we might as well “beat the air.” A very large part of our knowledge of a man’s mind is furnished

by what he does—by his *conduct*. His *language* may and often does deceive us, but his *conduct* rarely. Every physician should be familiar with at least the important disturbances of volition, which we describe briefly.

1. Motor excitement—increased intensity of excitation from inadequate or trivial motives—activity of patients is increased—pressure of activity, busyness, chattering, screaming, laughing, singing, dancing, jumping, gesticulating, disrobing, tearing, destroying, striking, smearing, etc., etc. (so-called mania).

2. Hypersuggestibility—yielding to every accidental influence.

3. Paralysis—a partial or complete suspension of activity, evidenced by anergy, lack of initiative, *doubt*, a feeling of inadequacy.

4. Retardation—psycho-motor retardation—a diminution of volitional impulse, in which movements are slow, wearied, difficult, and almost impossible. There is great difficulty in carrying out the simplest volitions, as speaking, writing or walking. The lips may move as if in articulation, but only the faintest, or no sound issues. When extreme it amounts to stupor. Retardation is often associated with profound sadness and depression.

5. Negativism—where patients do just the opposite of what one would expect normally—refuse to talk or answer questions, close eyes or mouth tightly when asked to open them, active resistance, great muscular tension, etc.

6. Sterotypy—constant or frequent repetitions of postures, gestures, mannerisms, etc.

7. Mannerisms—patients assume a peculiar manner of talking, walking, moving, gesticulating, etc.

8. Catalepsy—body and limbs remain in fixed position for long periods.

9. *Flexibilitas cerea*—limbs can be moulded like wax.

10. Echopraxia—imitating everything done by those near.

11. Echolalia—repeating everything said by bystanders.

The above are details which help to define the *general* conduct and thus show its *deviation not only* from the *patient's norm*, but *from the standard imposed to-day* by society. Even the laity know that the conduct, manner, expression and speech of insane people are more or less peculiar, and differ from their habits before the onset of insanity.

Having endeavored to discuss the symptoms of insanity as far as the time will allow, let us briefly summarize, and then conclude with concise definitions of some at least of the various psychoses.

METHOD OF RECORDING CASES.

1. Note name, age (exact date of birth), and description of patient, as fully as possible, for purpose of identification; also addresses of relatives.

2. Family history.

3. Previous history of patient along the lines of analysis given above.

For 2 or 3 it will be necessary not only to question the patient, but his nearest relatives, his friends and associates, his employer, and if possible inspect his writings.

4. Make a complete physical examination, recording systematically the condition of the circulatory, respiratory, alimentary, genito-urinary, and nervous systems, the special and general senses. Remember that when the mind is disordered, the body also suffers, in part at least. While *all* physical symptoms are important, yet perhaps it would be well to make special examinations of the eye, and kidneys and blood, and look for tremors, disturbances of equilibrium, speech defects, muscular disturbances, etc. The Noguchi test and lumbar puncture are desirable. In general paresis (dementia paralytica), the exhaustion and infection psychoses, as well as alcoholic, epileptic, organic, and senile psychoses, physical symptoms are not only very prominent, but often have an etiological as well as symptomatic value.

5. Make a concise mental status, giving in order the disturbances noted in perception, apperception, memory, train of

thought, judgment, the emotions and feelings, the will, conduct, and actions. Finally, note date of onset of mental disorder; if gradual or sudden; if there have been previous attacks; if course is progressive or stationary; if there have been remissions; if patient is dangerous to self and others (suicidal, or homicidal). These things will not take as much time as you think, but at any rate it pays. You can acquire much of the mental status while obtaining the family and personal history, and even more while making your physical examination.

From the very beginning one can draw from the deportment, expression, and physiognomy, some conclusions as to the attitude of the attention—lack of sympathy, indifference, interest, curiosity, and the disposition of patients, exuberance, unruliness, unrest, fear, doubt, quiet, or apathy. By simple questions as to name, age, or previous life, we can establish whether *consciousness* is clear or not, and if capacity for apprehension, and immediate utilization of sensory impressions are maintained. At the same time we can make an approximate estimate of the rapidity of the train of thought and the memory of the previous life. We must also seek to establish the condition of *memory* for *remote* and *recent* events, *orientation* of time, place, and person, including the immediate environment, the *consciousness* of *disease*, and insight; we thereby elucidate whether we have to do with an ordered train of thought or a flight of ideas—a delirious, confused, circumstantial, desultory or heedless train of thought. Meanwhile we gain all sorts of broad standpoints for the estimation of the remaining psychic performances which can serve us as *guide posts* for the discovery of the disturbances which appear less directly from day to day.²

If the writer has succeeded in presenting to the general practitioner a clear picture of the symptoms of mental disorder, it will in *most cases* enable him, with sufficient study and an adequate history, to *determine* the existence or absence of mental disease in an individual alleged to be insane. In a few cases a “snap diagnosis” may be correct, but usually *more than one* examination is necessary. At the Connecticut Hospital for the Insane up to October 1, 1908, 12,823 patients were committed, and ninety-seven of these, or 0.75 per cent.,

² Kraepelin; Psychiatrie.

were diagnosed as "not insane." In these ninety-seven cases a temporary disturbance was—honestly enough—mistaken for a more permanent derangement.

Presuming that the general practitioner has secured all possible information in regard to the patient, both before and after the onset of mental disease, and has arranged his material—family and personal history, etiology, symptomatology and course—he can surely *demonstrate* to the *proper* authorities or to his confrères, or the friends of the patient the existence of insanity. Then, and *only then*, is he in a position which justifies and warrants him in *certifying* in the manner prescribed by law that "John Doe" is insane.

As some may not be familiar with the manner in which a certificate of insanity is made, the regular form of commitment paper is added. It will be seen that this paper not only deprives a person of his freedom for a time, but also is practically a lien on such property as he or his nearest friends may possess.

FORM OF APPLICATION FOR, AND ORDER OF COMMITTAL OF INDIGENT
INSANE PERSONS AND INSANE PAUPERS TO THE PUBLIC HOSPITALS
FOR THE INSANE, AS STATE AND TOWN BENEFICIARIES.

TO THE HONORABLE COURT OF PROBATE for the District of Shrewsbury.

The undersigned, W. Jones, of the town of Shrewsbury respectfully represents that John Doe *resides in* the town of Shrewsbury, within said District, and is *an indigent person not a pauper*, and is entitled to the benefits of the provisions made by the statutes of this State for the support of insane *paupers—indigent persons*.

He therefore prays your Honorable Court to take said matters into consideration, and upon finding the allegations of this application to be true, to order said John Doe to be taken without delay to the Connecticut Hospital for the Insane at Middletown—to the Norwich Hospital for the Insane in the town of Preston, pursuant to the statutes in such cases provided.

Dated at Shrewsbury this 26 day of April, A. D. 1910.

Signed, W. JONES.

AT A COURT OF PROBATE holden at Shrewsbury, within and for the District of Shrewsbury, on the 26 day of April, A. D. 1910.

Present A. B. Cole, Judge. Upon the foregoing application of W. Jones of the town of Shrewsbury, within said District.

It is Ordered, That T. A. Smith of Shrewsbury and H. M. Brown of Shrewsbury, reputable physicians, be and they are hereby appointed to fully investigate the facts in the case of said John Doe, represented to be insane, and report the same to this Court.

And it is Further Ordered, That Sam Johnson, a Selectman of said town of Shrewsbury, be and is hereby appointed to fully investigate the facts in the case of said John Doe, represented to be insane and an indigent person not a pauper, and make report to this Court whether said John Doe is an indigent person not a pauper, within the meaning of Chapter 196, of the public acts of 1905, of this State.

Attest, A. B. COLE, *Judge*.

TO THE HONORABLE PROBATE COURT for the District of Shrewsbury.

The undersigned, a Selectman of the town of Shrewsbury, hereby reports that pursuant to the order of said Court, passed on the 26 day of April, A. D. 1910, he has fully investigated the facts in the case of said John Doe, represented to be insane and an indigent person not a pauper, and is of the opinion that said John Doe is an indigent person not a pauper, within the meaning of Chapter 196, of the public acts of 1905, of this State, and further reports that he finds the said John Doe to be possessed of property, real and personal, as far as he can ascertain, the value of which he estimates as follows:

About fifty dollars in the Shrewsbury Savings Bank.

And he finds the facts relating to the residence of said John Doe, so far as he can ascertain the same, to be as follows:

He has always resided in Shrewsbury.

Dated at Shrewsbury this 30 day of April, A. D. 1910.

Signed, SAM. JOHNSON, *Selectman*.

TO THE HONORABLE PROBATE COURT for the District of Shrewsbury.

The undersigned, T. A. Smith, physician, hereby reports that pursuant to an order of said Court passed on the 26 day of April, 1910, he has fully investigated the facts in the case of John Doe, represented to be insane, and is of the opinion that said John Doe is insane, and that the prayer of said application should be granted.

He has formed the above opinion regarding said John Doe from (a) the conduct and conversation observed by him personally, and from (b) other facts ascertained, including those communicated to him by others, which are as follows:

(a) Conduct, attitude, conversation, etc., observed by him personally:

Marked and continuous emotional depression, delusions of self-abasement, of persecution, of condemnation, of abandonment by God and of contamination, sluggishness of thought, incapacity for employment, indifference as to personal appearance, suicidal attempts, refusal of food, insomnia, much weeping and anguish.

(b) Other facts indicative of insanity, including those communicated to him by others:

Result of illness Dec., 1909, with increasing emotional depression, delusions of self-accusation, inability to employ himself, slackness in care of person and clothing, threats of suicide.

The above statements regarding said John Doe are true to the best of my knowledge, information and belief.

Dated at Shrewsbury this 26 day of April, A. D. 1910.

T. A. SMITH, *Physician*.

TO THE HONORABLE PROBATE COURT for the District of Shrewsbury.

The undersigned, H. M. Brown, physician, hereby reports that pursuant to an order of said Court passed on the 26 day of April, 1910, he has fully investigated the facts in the case of John Doe, represented to be insane, and is of the opinion that said John Doe is insane, and that the prayer of said application should be granted.

He has formed the above opinion regarding said John Doe from (a) the conduct and conversation observed by him personally, and from (b) other facts ascertained, including those communicated to him by others, which are as follows:

(a) Conduct, attitude, conversation, etc., observed by him personally:

Patient in bed, very marked depression and retardation. Believes he has committed an unpardonable sin, is unfit to live and should die at once. Cursed by God and forsaken by the Holy Ghost, his mind and life are wholly bad and daily becoming more retrospective. Dates trouble back for 23 years. Believes he is doomed and damned to eternity in hell, crying, slight tremor.

(b) Other facts indicative of insanity, including those communicated to him by others:

Poorly nourished, constant ^{re}tion, ^{SPEN}s of self-destruction. Expressions of suicidal intent, ^ss: ^{ME}ried to break neck by standing on head. Repeated out ^{nal} ME ^{ing} and self-accusation. Claims nurses have ruined his li ^{ing} making him eat. Repeated prayers for death, etc., etc.

The above statements regarding said John Doe are true to the best of my knowledge, information and belief.

Dated at Shrewsbury this 28 day of April, A. D. 1910.

H. M. BROWN, *Physician*.

AT A COURT OF PROBATE holden at Shrewsbury, within and for the District of Shrewsbury, on the 30 day of April, A. D. 1910.

Present A. B. Cole, Judge. Upon the hearing of the application of W. Jones of the town of Shrewsbury alleging that one John Doe of the

town of Shrewsbury, within said District, is an insane person and an *indigent person*, and praying that said John Doe may be taken to the Connecticut Hospital for the Insane at Middletown—to the Norwich Hospital for the Insane in the town of Preston, as per said application dated the 26 day of April, 1910, on file in this Court appears.

This Court having investigated said case and duly considered the reports of the physicians and Selectman, by this Court duly appointed to examine and report the facts of said case, finds the allegations of said application to be true, and that said John Doe is insane and an *indigent person*, and further finds said John Doe to be a resident of the town of Shrewsbury, and the amount of his estate as reported as afore-said to this Court is \$50.00.

It is Therefore Ordered that the said John Doe be taken by George Wilson, without delay, to the Connecticut Hospital for the Insane at Middletown, The Norwich Hospital for the Insane in the town of Preston, where he shall be kept and supported so long as may be requisite.

And this Court Further Directs that James Doe of Shrewsbury accompany the said John Doe to said hospital or asylum.

STATE OF CONNECTICUT, }
District of Shrewsbury. } ss.

Attest, A. B. COLE, *Judge*.

PROBATE COURT,

April 30, 1910.

The above and foregoing is a true copy of the order of commitment and of the proceedings in said case, on file in this Court.

Attest, H. M. COLE, *Judge*.

Ased on DIX.
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FORMS OF MENTAL DISEASE.

While there is no absolutely complete classification of the various forms of mental disease, the system of Kraepelin is accepted by a large number of alienists as the most satisfactory, and adopted by many hospitals, including the Connecticut Hospital for the Insane. A brief summary of his arrangement is therefore appended, as a guide. But when all is said, it is evident that we need *actual facts*—an exact and complete knowledge of the history, onset, symptoms and course in any

given case. The naming of the psychosis can well enough be deferred.

1. *Infection Psychoses*, supposed to develop from the toxins of infectious disease—*fever delirium*, *infection deliria* and post-febrile psychoses, as well as a number of cases accompanying slight bodily illness, furunculosis, angina, etc., etc. The prominent symptoms are great psycho-motor unrest, increased emotional irritability, clouding of consciousness, hallucinations and delusions, with more or less pronounced physical weakness, and other bodily symptoms naturally accompanying or following as a direct result of the particular disease.

2. *Exhaustion Psychoses*—collapse delirium, acute confusional insanity, and acquired neurasthenia. The two former present clouding of consciousness, incoherence of thought, numerous illusions and hallucinations, and great motor excitement. Neurasthenia needs no description.

3. *Intoxication Psychoses*—from *alcohol*, *opium*, *cocaine*, *ether*, etc. In addition to the well-known symptoms, we find more or less moral deterioration.

4. *Thyroigenous Psychoses*—myxœdema and cretinism. Here also the etiology gives a clue to the symptomatology.

5. *Dementia Præcox*—a term provisionally applied to a large group of cases (from 14 to 30 per cent. of all admissions), which are characterized in common by a pronounced tendency to mental deterioration, which may be of varying degree. There are three forms:

(a) *Hebephrenic*. Emotional deterioration—dullness, apathy, silliness, causeless laughter, paralysis of thought, desultoriness, untidy habits, lack of interest, with occasional periods, in earlier stages, of hallucinations, delusions, and motor excitement, which are episodes only. The fundamental tone is deterioration.

(b) *Catatonic Form*. Here we find states of stupor, excitement and depression at irregular intervals, with extreme negativism (contrariness) stereotypy, constrained postures,

waxy flexibility of muscles, muscular tension, mutism, refusal of food, etc. Many of the "fasters" and "sleepers" which puzzle general hospitals, and are exploited by newspapers, undoubtedly belong to this class.

(c) *Paranoid Forms*. First form—numerous persistent, incoherent, and changeable delusions of both a persecutory and expansive content, with a moderate degree of excitement, and a rather rapid deterioration. Second form—a host of fantastic delusions (both persecutory and expansive), numerous hallucinations, invention of new names to express the nature of their troubles ("struze," "sobroeks," etc.), and extraordinary attempts at protection by singular armor, bandages, arrangement of dress, etc., etc.

6. *Dementia Paralytica* (general paresis). Four forms now recognized—the *demented*, the *expansive* (megalomania), the *agitated* (galloping paresis), and the *depressed* forms. *Juvenile paresis* is simply a form appearing in *early youth*. The *physical symptoms* are very important and conclusive—ataxia, Romberg, speech defect (slurring, elision, etc.), Argyll-Robertson pupil, analgesia, epileptiform and apoplectiform attacks, etc., are now recognized pretty generally by the laity even. Tests for syphilis—the prominent etiological factor—should always be made.

7. *Organic Dementias*—mental deterioration following or accompanying diffused cerebral sclerosis, Huntington's chorea, multiple sclerosis, cerebral syphilis, tabes, arterio-sclerosis, cerebral tumor, apoplexy, abscess, and trauma. Every physician meets a case of some form of organic brain disease, and should study the mental symptoms as carefully and fully as he does the physical symptoms. These cases often have great significance from the medico-legal standpoint (testamentary capacity, etc.).

8. *Involution Psychoses*—occurring at or after the climacteric—melancholia, presenile delusional insanity, and senile dementia. In melancholia, in addition to marked fear and sadness, there occurs numerous self-accusations, delusions of

sinning, worthlessness, hopeless outlook, nihilistic and hypochondriacal delusions, and great psycho-motor unrest (groans, moans, wringing hands, pacing to and fro, suicidal threats and even attempts, etc.).

The senile psychoses usually are of the third (demented) form. In presenile delusional insanity we find numerous fantastic delusions of suspicion, persecution, and infidelity, with marked hypochondria.

9. *Maniac-depressive Insanity*—maniac, depressive and mixed forms, which usually recover, but recur later on in the same or one of the other forms.

In the maniac form we see psycho-motor excitement, with greater or less pressure of activity, flight of ideas, distractibility, and unstable and rapidly changing emotions with predominance of pleasure, with clear consciousness as a rule, good memory, and absence of deterioration.

In the depressive form we see sadness and depression, psycho-motor retardation and absence of spontaneous activity.

The mixed forms consist of various combinations of the symptoms characteristic of both the manic and depressive form.

A group of cases present a well-defined cyclic form, where a distinct and characteristic manic phase passes over more or less gradually into a depressive phase, which in turn gradually abates, and is followed by a lucid interval, and so on throughout life.

10. *Paranoia*—a psychosis of insidious onset, developing gradually on a defective basis, and clinically characterized by the progressive evolution of a permanent system of persecutory and expansive delusions (the latter generally leading to a change of personality); retrospective falsifications of memory and hallucinations at some period, but without clouding of consciousness or mental deterioration except in judgment. All paranoiacs, whether belonging to this group or to the dementia præcox group, are *dangerous*, prone to homicide, and a menace to the community. As recovery never occurs,

all paranoiacs should be confined for life in a proper institution.

11. *Epileptic Insanity*—periodical ill-humors, befogged states, stupor, anxious and conscious deliria, pre- and post-epileptic insanity, attacks of furor, psychic epilepsy, etc.

12. *Psychogenic Neuroses*—hysteria, traumatic neurosis, and dread neurosis.

13. *Constitutional Psychopathic States* (insanity of degeneracy)—nervousness, constitutional despondency, constitutional excitement, compulsive insanity (tormenting ideas and fears—phobias, as mysophobia, or dread of dirt), impulsive insanity (the impulse to tramp, set fires, steal, kill, etc., and contrary sexual instincts).

14. *Psychopathic Personalities*—the born criminals, the unstable, the morbid liar and swindler, and the pseudo-querulants.

15. *Defective Mental Development*—imbecility and idiocy.

Those who desire more complete details are referred to Kraepelin's "Lehrbuch der Psychiatrie"; Kraepelin's "Lectures on Clinical Psychiatry," translated by Johnstone and published by William Wood & Co., N. Y.; Diefendorf's Adaptation of Kraepelin's "Lehrbuch"; Stoddart's "Mind and its Disorders," London, Lewis; Paton's "Psychiatry."

DISCUSSION.

DR. MAX MAILHOUSE (New Haven): I have had an opportunity to look over this paper, so that I am basing what I have to say upon some of the statements contained in the part of his paper that Dr. Keniston has not had time to read. To adequately discuss, in the space of five minutes, such a *multum in parvo* as has been so ably presented to us, is to attempt the impossible. Suffice it to say that the general practitioner who can make this paper his own and use it as the writer can do would soon become an alienist and a most expert witness. My experience with these forms of disease as the general practitioner sees them leads me to lay particular emphasis on a few points necessarily touched upon but briefly by the writer. One of these is dementia paralytica, which often begins with neurasthenic symptoms. If the physician will but bear this fact in mind, and always make his diagnosis of the functional

affection by the process of exclusion, he cannot go wrong; the speech-defects, pupillary and other physical signs, and the evidence of actual mental retrogression are sufficiently characteristic of paresis.

Another class of mental diseases of medico-legal importance is found in the group classed as psychopathic personalities—the born criminals, of course; but more particularly the near-criminals, those as to whom there may be doubt as to whether the trouble is insanity or crime—those mentioned in the paper as the unstable, the morbid liar and swindler, and the pseudo-querulous. In these individuals it is of the highest importance, as the author states with reference to the patient's previous history, to determine whether the conduct and character (i.e., personality) deviate from their own norm, as well as from the standard imposed to-day by society. Dr. Keniston well says that, in order to determine this point, it will be necessary to question the patient's nearest relatives, friends, and associates; and I might add to this list those absolutely disinterested. It is in this class of individuals that it may become a difficult matter to demonstrate whether so-called delusional statements (i.e., delusions) are actually such, or are the voluntary creations of a criminal or malicious, or possibly revengeful—but, nevertheless, responsible—brain.

Finally, if I were to select any one part of this paper that appeals to me more than any other, I would especially commend the paragraphs relating to disturbances of the judgment. This complex function, so correlated, as it is, with all the other functions of the mind, has been so aptly described with reference to its derangements that this alone might well be called a thesis of the writer of the paper.

The statement of the large percentage of transitory mental disturbances that have appeared in the State Hospital for the Insane seems to me to be a strong argument for the establishment of psychopathic wards in general hospitals. These cases constantly arise, and there is no institution in which to place the patients, who must be sent to the State Hospital—temporarily, at least. The general practitioner recognizes mental derangement and realizes the importance of medical attention in such cases.

There is one class of cases that I should like to have Dr. Keniston classify for us. There are a number of neurasthenics, or so-called psychasthenics, who become profoundly depressed and melancholic. They are not actual cases of melancholia, however. They have no inhibition of thought or ideas, and no delusions; yet I have seen some instances in which they have committed suicide. They have the so-called *tedium vitae*. These cases are important, and it is important for us to be able to class them in some category other than simple psychasthenia.

DR. WILLIAM E. FISHER (Middletown): We all recognize that psychiatry is a branch of general medicine, and it would hardly seem necessary to make a special plea for its study and investigation, not so much for the purpose of curing actual cases of alienation, but "to promote," as one writer has expressed it, "normal thinking, and the best way of increasing the brain power of the nation."

Unfortunately, at the present time there is only one fully-equipped and well-organized psychiatric clinic under the control of any university in this country, and I have knowledge of only one medical college which affords instruction in psychiatry, and makes it part of the curriculum, despite the fact that we all recognize that the question of the mental health of a community and its preservation is of vital importance.

What is insanity? How can we lessen the ravages of this terrible scourge? How far are individuals responsible for their actions? These and other problems of equal importance can only be solved upon the basis of steady, painstaking observation, supplemented whenever possible by experiment. By these methods alone will it be possible to obtain a comprehensive, rational understanding of the nature of the disease. It would hardly seem necessary to emphasize the necessity of more active coöperation between the alienist and the general practitioner, were there not abundant evidence of a lack of communism of interests. Probably much of the indifference exhibited by the medical public to the study of psychiatry has arisen because alienists have hitherto failed to enlist the sympathy of intelligent physicians, inasmuch as they have neglected to demonstrate with sufficient clearness tangible reactions in cases of insanity, and failed to group them in some orderly fashion. Most of the phenomena are as capable of demonstration as are the physical symptoms of thoracic disease, and it is no less possible to group symptoms of the different psychoses so as to afford typical clinical pictures, than it is to group the symptoms of respiratory or cardiac diseases. Even with the crude and imperfect methods in use by the alienist, it is possible to obtain a clue as to what constitutes the normal functioning of the brain, thereby enabling the alienist to apply tests to the solution of problems affecting the mental welfare of the individual and of the community.

Everyone admits that it is the duty of the physician to warn those with weak hearts or lungs not to overtax those organs. Is it not of equal importance that the mental health of the community should be safeguarded? Only some men are born to be educated. How many more, unfortunately, have thrust upon them an education that is disastrous, not only to themselves, but also to the community at large!

It is perfectly possible for the physician to make a psychological selection, weed out the unfit, and prevent the sins of their educated fathers

and mothers from being "visited upon the children even unto the third and fourth generation." There is a preventive morality, just as there is a preventive medicine, and he who would understand the former must know something about impulses, imperative ideas, inhibition, psycho-motor excitement and suggestion. Much of the difficulty formerly experienced in obtaining clinical pictures of the different psychoses was due to the inadequacy of the methods pursued in restricting the study of the disease to the minute analysis of symptoms at some given period, instead of studying the entire course of the disease. A general survey of the whole course of the disease resulted in the recognition of the relation of what were formerly regarded as isolated groups of symptoms.

Kahlbaum, by adopting this method of study, was able to clearly define the katatonic symptom complex, and Hecker was enabled to elucidate hebephrenia, or the so-called adolescent insanity, but it was left to Kraepelin to make probably the most radical departure in modern psychiatry. This investigator found that the time had arrived to sketch out in a general way certain groups of symptoms, which he felt justified in considering disease entities. Subsequent investigators have proved the correctness of his views, and his symptomatological classification, with the clearly defined clinical pictures of the different psychoses achieved by the consideration of the evolution of the whole life in insane patients, and utilization of a retrospective review of the development in such cases as had reached terminal stages, has established psychiatry upon a firm basis.

Despite the fact that the exact nature of the disease process in cases of alienation has long remained in doubt, and notwithstanding that we are still in ignorance of the relation which structural changes bear to disorders of function, we should be encouraged by the fact that the little we know is sufficient at least to show the paths along which workers in psychiatry should pursue their studies.

We are naturally led to inquire in investigations into the nature of the process of alienation, whether or not mental disorders are to be classed as diseases of the brain. Viewed from a purely symptomatological standpoint, the answer must be in the affirmative, and in one sense this position is perfectly justifiable, but this view cannot be maintained without some qualification.

A good example is seen in the study of the mental disturbance associated with myxœdema. Here it is known that anomalies in the function of the brain depend upon disturbance in the thyroid gland, so that it would be manifestly unfair to classify myxœdematous insanity as a disease of the brain alone.

From evidence at our command, there can be little doubt that the changes noticeable in the nerve cell in febrile delirium, the acute con-

fusional states, as well as in the terminal stages of nearly all psychoses, are the result of the action of toxins.

As to the manner in which these poisons act, or the source from which they are derived, we are still ignorant, and in regard to the more general subject of autointoxication, we practically know nothing.

These illustrations are simply cited as examples of the many defects in our knowledge, and serve to emphasize the difficulties with which the alienist is confronted in his attempt to gain a more comprehensive knowledge of the nature of alienation.

In the examination of a patient the alienist has a threefold duty to perform. First, he must determine whether or not the individual is suffering from any form of illness. If this question is answered in the affirmative, it is necessary, if possible, to find out the causes which have been instrumental in bringing about the illness, or that favor its development and continuance, as well as all other factors bearing upon the case, in order to determine upon a thoroughly rational course of treatment. Finally, he must study every case that comes under his observation with such care and accuracy as to bring to light any new facts, no matter how trivial they may appear at first sight, that will lead to a more comprehensive knowledge of mental disorders.

Those who appreciate how difficult it is to obtain careful records in the cases of so-called physical disorders, will appreciate the still greater difficulties which exist in the examination of those who are afflicted with alienation. We can readily understand the reason for this. In the first place, the absence of symptoms which can in any sense be regarded as pathognomonic, and, in the second place, the alienist at present is dealing, not with definite disease entities, but simply with groups of symptoms. During the clinical examination, it should always be borne in mind that the whole personality of the individual is more or less involved. Guard against falling into the habit of seizing upon certain symptoms, ignoring others, to make the clinical picture fit some arbitrarily constructed frame.

DR. GEORGE N. LAWSON (Middle Haddam): This is a very valuable paper from the standpoint of the specialist for the benefit of the general practitioner, and I want to thank Dr. Keniston for his very clear statement of the facts that we need in the diagnosis of insanity and of the data that we require in making out certificates. It ought to be very helpful to us as general practitioners.

There are two minor points that he makes that I should like to call attention to as generally helpful to those who have not had a chance to study insanity very much. He says that delusions are not always indicative of insanity and are not always present in the insane. That is a point that he makes early in his paper. He afterwards makes

another point, that it is not enough to find out that an insane man knows or does not know right from wrong; that unless a person has lost his mind entirely, even if insane, he may know right from wrong. This is interesting in regard to the criminal insane. I understood Dr. Keniston to say that a man is really responsible for his crimes very often, even though insane. It seems to me, as a family physician, that we are in a position to get a good many of these points very easily. A family physician ought to know the history and general make-up of his patient—what sort of person he is; and should be able to say more readily than a stranger whether he is insane or not, whether he has passed from his own norm and from the recognized standards of the day.

One other point in regard to the value of the family physician in these cases: He can be of great assistance to the staff of physicians in the hospital, if he will simply write up the case and give this history to these physicians, along with the certificate of insanity. The family physicians, many times, very hurriedly make out certificates giving legal information. If they would take a quarter of an hour and write a letter to the hospital staff, describing the previous life, characteristics, and habits of the person, and the onset of his disease, it would be very helpful.

DR. JAMES M. KENISTON (Middletown): I find that I perhaps misstated the percentage of cases found not to be insane. What I meant to say and write was that it was seventy-five hundredths of one per cent., and not seventy-five per cent.

Instructions to Patients Suffering from Specific Urethritis.

P. DUNCAN LITTLEJOHN, M.D., NEW HAVEN, CONN.

As the army of those unfortunates suffering from gonorrhœa becomes more and more numerous, it is constantly impressed upon the genito-urinary specialist that few indeed of these patients possess any definite knowledge concerning the dangers and proper care of this disease. Outside of New York City and a few other large centers, almost no dispensaries, and comparatively few physicians, furnish patients with a printed list of instructions concerning the most important features of treatment. With the idea of possibly lowering somewhat the percentage of complications, and at the same time impressing upon the patient what his share of the treatment is to be, I have been giving these printed slips to my office clientele for the past three years. It is my experience that a few directions, printed in such a manner that they are easily understood, are of more value to the patient than a long oral dissertation on the various phases of this subject.

The gonorrhœaic indeed, must be treated with considerable diplomacy in order to secure his entire confidence, thus enabling the physician to impress upon the individual the seriousness of his disease. For instance, he may be the very young man who is consulting the physician for the first time. Usually he is shy and easily embarrassed, both from shame and false modesty, and therefore comprehends, or at least remembers very little of any oral instructions, and in consequence becomes confused when trying to follow his directions regarding treatment. On the other hand, if he is dismissed with a list of printed instructions and a few words of encouragement, his fears and embarrassment are quieted, and at his

leisure he determines what his duties are in the subsequent treatment of the case.

Again, we may be consulted by the *blasé* youth. Although it is his first attack, he has learned from his associates that "the clap is no worse than a hard cold," and therefore looks upon his illness very superciliously. Later, on studying the list of directions, he realizes that it is impossible for him to rid himself of gonorrhœa in a few days and thus views the matter in a more reasonable manner. In an individual of this type, if the physician gives his instructions verbally, the patient is apt to take the conversation from a different standpoint from what is intended. That is, because of the mental attitude with which he approaches the doctor, the patient either conceives the idea that he is being frightened, or that the physician hopes to derive some pecuniary benefit.

Lastly, the chronic cases which drift from dispensary to dispensary, and from physician to physician, nearly all, on careful questioning, reveal that very little has been told them concerning the dangers of this disease, either to themselves, to their families, or to the community at large. A vast majority have never received even the most casual instruction in the use of the hand syringe, they have not grasped the fundamental facts concerning proper hygienic and dietary treatment, and few are told what infinite care and patience they must exercise before they can expect a cure, and thus avoid the many sequelæ which follow in the wake of a chronic gonorrhœa. Each time a recrudescence occurs these intractable cases consider themselves as having acquired a new infection, and promptly begin the use of some popular "drug store remedy," or consult a strange physician, trusting that he can tell them of some short and easy road to health.

There is no doubt as to who should assume the blame for the greater part of this ignorance. We, as physicians, both in private and public practice, have been very lax in our instructions to gonorrhœal patients. Oftentimes the individual is given a prescription or two and ushered out of the office with a few words of caution against infecting the eyes, and an implied

if not an actual statement that gonorrhœa is more or less of a trivial complaint, which can be quickly and easily cured. These are the unfortunates that with the cessation of the discharge are pronounced cured; occasionally by their physician, but more frequently through the aid of their own diagnostic skill. They are asked to submit to no examination of the adnexa, while no microscopical findings or urinary tests are indulged in to prove a cure has taken place. Again, the number of uncured cases is constantly being added to by the widespread belief that gonorrhœa is incurable, and therefore treatment resolves itself into a useless luxury. Strange as it may seem, this view is not confined to the laity alone, but is upheld by not a few physicians and others of scientific attainments. Only recently a prominent sociologist, while lecturing before a number of undergraduates, stated that gonorrhœa was *incurable*, while the same authority is quoted as having said, that syphilis was the less to be feared of these two diseases, because of the higher percentage of cures which are credited to the modern treatment of the latter trouble.

As evidence of the many uncured cases of specific urethritis, gynecologists are practically unanimous in stating that at least 70 per cent. of the cases of suppuration of the uterus, tubes, and ovaries which they are called upon to treat, are the result of more or less innocently acquired gonorrhœa; while it is also stated that women who have suffered from the above-mentioned troubles rarely give birth to living children, or what is worse, are almost always sterile.

I am sure that many of you will agree with most of these statements, while if you accept only one or more of them, you cannot fail to bear me out in the contention that as physicians we should bend our energies toward correcting these erroneous ideas. No patient should be allowed to stop treatment until we have satisfied ourselves by all the well-known methods that it is safe for him to do so. We certainly are in duty bound not to countenance these poorly refuted statements that gonorrhœa is incurable, for if such theories are allowed to spread indiscriminately, they will cause to refrain from treat-

ment many men who otherwise might readily be restored to health.

No originality is claimed for these leaflets, but a number which have previously appeared have been somewhat verbose and at times ambiguous. I have purposely made my statements as terse and as short as possible in order that they may be easily understood and at the same time emphatic.

Following the opening paragraph, which you will note* is devoted to the fact that gonorrhœa is not the slight complaint that many consider it, while its contagiousness and a few of the complications are touched upon, the question of diet is taken up.

Diet. Alcohol in any form must be strictly avoided. Notwithstanding the fact that almost every patient is aware that he must not use liquor or beer, not a few hold to the old-fashioned theory that gin is beneficial. They should all have explained to them that it is the alcohol contained in intoxicating beverages which, while passing over the delicate mucous membrane of the urethra (it is being excreted in the urine), because of its irritating properties intensifies the existing inflammation. Occasionally we meet a few people who are desirous of trying that infallible cure of "drinking away a clap." I invariably tell them that the individual who gives such advice seldom practices it twice upon himself, for obvious reasons. In place of intoxicants, others imbibe large quantities of soft drinks, such as soda, ginger ale, etc., but they are all harmful, because most of these mixtures contain spice of some sort which is irritating to the urethra when excreted in the urine. Some physicians permit their patients to take cocoa while they prohibit tea and coffee, but to my mind there is no value in any of them. Highly spiced foods, such as pickles, condiments, etc., and red meats of any kind are not allowed, while strawberries and tomatoes are contraindicated because of the increased urinary acidity that results.

Exercise is a very important subject and should be dealt with carefully. There seems to be a wide range of opinion among the profession regarding the proper amount of exer-

* See end of article.

cise to be taken. All forms of violent exertion should be avoided, such as athletics, bicycling or horseback riding, and riding in automobiles or railroad trains. It has caused me not a little surprise to note the number of cases of anterior urethritis, with mild symptoms, which are suddenly converted into acute posterior complaints, with the well-known accompanying complications, by the patients thoughtlessly taking a long automobile ride or a two or three hours trip on the train.

On the other hand, there is no reason why the individual should not follow his usual occupation, provided he wears a well-fitting suspensory bandage.

Sexual excitement is one of the important points which is only casually mentioned, or oftentimes neglected entirely. Many men and women while suffering from an acute attack of gonorrhœa will avoid sexual intercourse, but do indulge in various forms of sexual excitement, such as kissing, embracing and other forms of fondling, and in consequence the prolonged stimulation to which the genital organs are subjected causes as much harm as if contact took place. Thus a few words of instruction along these lines will usually convince a patient that he is only prolonging the disease and possibly exposing himself to various complications if these directions are not carried out.

Sanitary Precautions. Not a few patients present themselves at my office, even when they have previously consulted a physician, wearing a bit of cotton tucked under the foreskin to protect the clothing. This is in direct antithesis to nature's effort toward a cure, for naturally there is a tendency for the urethra to rid itself of waste products by allowing the same to drain away. The cotton aforementioned only dams back the discharge in the urethra, and thus exposes healthy areas to the dangers of autoinfection, while the local inflammation in the region of this canal is aggravated.

Another equally impractical idea of receiving the discharge is the "gonorrhœa bag," the sides and bottom of which become smeared with countless gonococci, which in turn are

the cause of constant reinfections. A few words as to the harm of wearing dressings of this sort will quickly convince the patient of the sense of the argument. The correct dressing, and one which at the same time provides protection for the clothing as well as allowing free drainage, is a piece of plain gauze, eight inches long and four inches wide. Cut a small hole in the center of the gauze and, first retracting the foreskin, pass the penis through the gauze until the latter rests in the sulcus; then when the foreskin is pushed forward, the dressing is retained. If the individual has been circumcised, a longer piece of gauze only is required, the same being passed back to the root of the penis and there pinned to the suspensory bandage. Thus the discharge is all caught in the folds of this bit of cloth and the clothing protected. Emphasis must be placed on the necessity of changing the dressing following each micturition, for patients have been known to neglect this precaution for twenty-four hours or more and thus defeat the very purpose for which this arrangement is intended. Each man should be warned of the danger there is in handling these dressings, both for himself and also for innocent people, and therefore should burn all contaminated material.

Very few laymen appreciate the tenacity with which gonorrhœal pus clings to the fingers, and then is easily transferred to the mucous surfaces, such as the eyes, rectum, etc. Therefore a careful cleansing of the nails and hands is imperative whenever the infected gauze is handled. If these instructions are lived up to there will be far fewer cases of innocently acquired gonorrhœa, to say nothing of the lessened frequency of infections of the vagina and rectum occurring among young children.

So, too, all infected persons should sleep alone, and if that is impossible, then they should always occupy the same side of the bed, while all toilet articles, especially washcloths and towels, must obviously be confined to the individual's use exclusively.

General Health. Particular attention should be given the alimentary tract in order to avoid constipation. Oftentimes

this is a neglected point until the patient speaks of it himself, so mention should be made of it in the circular. For, with hard fecal masses in the rectum, inflammation of the prostate is aggravated, while the whole pelvic circulation is impaired. Again, the light milk diet called for invites some costiveness, and hence a small dose of some aperient must be frequently used.

Unless it is clearly explained to them, few people realize the value of drinking large quantities of water. When once comprehended, it is surprising with what zeal people carry out this simple procedure and the favorable results they obtain. Large quantities of fluid ingested are of benefit in two ways in this disease. First, the frequent urination which must take place causes a mechanical cleansing of the whole urethra, washing away the waste products of inflammation. Second, the increased amount of liquid excreted by the kidneys so dilutes the solid constituents of the urine, that the delicate mucous membrane lining the urinary tract is not exposed to further irritation caused by a concentrated urine. These patients should be cautioned, however, to cease the water drinking four hours before retiring for the night, in order that their rest may not be disturbed by a frequent desire to empty the bladder.

The diet in this disease is a question that admits of so wide a variation that the rules laid down in a leaflet of this kind have to be brief, but qualified in such a manner that they can be easily changed at the physician's discretion. Cases in the acute stage must limit themselves to a milk diet as far as possible, with a little milk toast and an occasional egg to vary the monotony. As the disease improves the diet can be increased with fish, oysters, clams, white meat of poultry, cereals, etc., the physician, of course, being the judge as to when a return to normal diet is safe.

Each individual should be cautioned to keep reasonably quiet after the day's occupation is finished. It is, of course, impossible for most people to drop their ordinary employment while suffering from gonorrhœa, for nearly everyone has someone

dependent upon him for support. Then, too, most patients respond much more readily to treatment if their minds are kept busy along their normal channels than if they give up their work and devote all their attention and thought toward a cure. For it is universally acknowledged that a too active local treatment, as well as undivided mental attention toward this trouble, is frequently followed by as poor results as when the disease is only casually taken care of.

Medication. While it is recognized by all of us that internal medication as a curative factor alone in gonorrhœa is unfortunately of little value, yet the favorable conditions with which proper drugs act upon the whole internal economy, demand their intelligent use in order to establish a favorable prognosis. Therefore, a sentence in a leaflet emphasizing the importance of being regular in taking one's medicine is of value.

A few words concerning the use of cold applications in treating chordee, and also the importance of emptying the bladder when this annoying complication arises, may often tide the patient over a very disagreeable night, or until he can consult his physician about more radical forms of treatment.

It is well to impress upon the individual that the medication prescribed is for his own case alone, and that different people in different stages of the disease require other forms of treatment. How often are we confronted with some very wise (?) person who unblushingly announces that he has an infallible cure for gonorrhœa, which on investigation almost always proves to be some combination of zinc sulphate used in the form of an injection, or else a nauseous concoction of cubebs, copaiba, etc. These drugs are prescribed with the utmost *sang-froid* for any and all the complications of this disease. Thousands are daily prolonging their complaint, to say nothing of the complications which are caused by the indiscriminate use of these cure-alls. I do not mean to convey the idea that the drugs mentioned are not of value when prescribed intelligently; but who among you would advise the use of an astringent like zinc in a beginning urethritis teeming with gonococci, or internal medication for the cure of a

chronic gonorrhœal prostatitis or a granular urethritis? The practice of handing prescriptions from one to another in patients of this class should be forcibly condemned by physicians, for as mentioned above, it not only prolongs the sufferings of many, but also adds to the complications which the physician is asked to deal with, and as a minor point, often reflects on the original prescriber's ability.

It is remarkable how few people realize the necessity of appearing in the office with a fair amount of urine in the bladder. Frequently patients express surprise that we wish them to urinate when they come for treatment, for previous experiences have convinced them that this is an unnecessary request. I can only explain the prevalence of this idea among the laity by the fact that many physicians fail to impress patients with this important diagnostic point. The individual's urine is almost our only guide as to the condition and progress of the disease, especially after the disappearance of the discharge. It is better by far to secure a multiple glass test of the urine than to be guided to any extent by listening to a rehearsal of the patient's own account of his progress, while omitting this important detail. Thus the clause in the pamphlet directing the patient to appear with urine in his bladder at once becomes apparent.

Local Treatment. One of the prime factors with which the patient has to deal in treating himself for gonorrhœa is the use of the hand injection. Its proper technique is scarcely ever mentioned in the text-books and the numerous theories which people have concerning its use and abuse only proves what a small amount of detailed instruction has been given along these lines. Notwithstanding that the writer is very partial to the use of hand injections in treating this disease, yet the fact remains that many complications are oftentimes traced directly to the injudicious use of the hand syringe. One frequently meets the over strenuous individual who reasons that the greater the force used in injecting, the deeper the penetration into the urethra, and therefore the better results he obtains. A general

folliculitis or an acute infection of the posterior urethra almost always rewards these zealous efforts. Next appears the man who, by compressing some portion of the urethra, (usually at the peno-scrotal junction,) endeavors to limit the passage of the injection backward, and thus, as he thinks, avoids future strictures or an infection of the bladder. His efforts nearly always result in none of the injection being retained. Improbable as these ideas seem, they are entertained by numerous people. So, too, there are a number of people who, as soon as they discover a discharge at the meatus, at once begin the use of some injection, irrespective of the stage or condition of the disease, and they should be warned to never use treatment of this kind without a physician's orders.

Since I have used these pamphlets it is surprising how much better are the results obtained by each patient when using his injections. These directions are as follows, viz:

1st. Always urinate before taking an injection.

2d. Drop the trousers and drawers below the knees, and fold shirt up over the abdomen.

3d. Seat yourself on the extreme edge of the closet seat or a kitchen chair, feet widely separated, legs extended, and retract foreskin.

4th. Injections are retained more readily when lying down. Do so if possible.

5th. Having filled the syringe, hold the penis just behind the head with the left hand, press the syringe firmly against the opening, and inject slowly and very gently.

6th. Never use a syringe that does not work smoothly.

7th. Use only one syringeful unless otherwise directed, and retain injection by compressing the opening with the thumb and forefinger of the left hand five minutes by the watch.

8th. Never lend or borrow a syringe and as soon as you are well destroy the instrument.

Permit me to explain briefly the reasons for these directions.

First. The idea of having the patient urinate before using

the injection is twofold. The micturition mechanically cleanses the urethra, thereby washing away numerous gonococci and debris, leaving a fairly clean surface on which the medicant can act. The second and equally important point is that following the injection the patient will not be called upon to urinate for some little time, thereby allowing greater time for the medicine to act on the bacteria before it is washed away by the next urination.

Second. This direction is to prevent soiling of the linen.

Third. If he is seated on the extreme edge of an unyielding surface, with legs widely separated, the parts are more accessible to the patient, while if the closet seat is utilized, a receptacle for catching any excess injection is not needed.

Fourth. When the individual is in the reclining position, the fluid through gravity finds its way toward the posterior urethra, and at times enters that cavity without the use of force, which is always a point to be desired.

Fifth. This is by far the most practical position to assume when using an injection, while the clause against the use of force is obvious in its meaning.

Sixth. Many of the urethral syringes on the market, because of inferior packing, have a tendency to kick or jump when the piston is pushed in, and they should not be used, for they may cause considerable trauma to the mucous membrane.

The reasons for the seventh and eighth clauses are quite apparent.

The final sentence in this leaflet is one of the most important, dealing as it does with the prospective cure of the individual. As I have already mentioned, it is at times almost discouraging to men in this line of work when we stop to contemplate the vast number of uncured cases of gonorrhœa who are at large in the community, for the reason that many of them have been pronounced cured by someone in authority; for as long as shreds appear in the urine following an attack of gonorrhœa, there must exist a lesion somewhere in the genito-urinary tract, *therefore the patient is not cured and should not be permitted to stop treatment.* The only exception to this statement

are those rare cases who have had a prolonged attack of prostatitis, in which the specific infection has given place to one of a pyogenic nature. But this contingency never occurs before two or three years have elapsed since the original disease, and can then only be proven by careful laboratory examinations. It can therefore be ignored in all cases of recent origin, and the statement reiterated, that as long as shreds appear in the urine the patient is not well.

In consequence, when a patient asks concerning a cure we should be very guarded in our statements. Before promising a favorable outcome, the writer explains to the patient the length of time required to treat a long-standing infection. The patient must remain under treatment until exhaustive microscopical and chemical tests have proven the absence of gonococci. Besides this no definite promise of a cure is made, for so much is dependent upon the personal equation as represented by the patient, as well as his ability to react to treatment. For this reason we should never give men permission to marry as long as shreds are present in the urine, and even with the disappearance of these floaters I do not believe we should assume the responsibility of making a positive statement. Explain to the individual that as far as modern medicine can say he is well, but there is a slight chance that somewhere in his urethra or prostate a very few gonococci may still linger that would infect an innocent person. The patient contracted the disease voluntarily and he alone must assume the responsibility of entering the marriage state.

These comments may seem at variance with some of the remarks made earlier in this paper concerning the cure of this disease. I fully believe that we can cure all cases of anterior infection and am as optimistic concerning the chronic cases, provided our directions are fully followed out for as long a time as is necessary. I also believe that cases so treated will not infect other people, but until the time arrives when we can prove without a doubt that all the gonococci have disappeared, we are scarcely justified in making a positive statement to that effect when matrimony is contemplated.

These are the instructions which are prepared in the form of a small folder :

.....191

THESE DIRECTIONS ARE GIVEN TO MR.

.....

FOR HIS USE WHILE SUFFERING FROM GONORRHOEA (CLAP).

Your disease is not a simple but a serious matter and requires strict obedience to directions in order to restore the organs to perfect health. It is therefore necessary that you do with faithfulness what is ordered. If you do not, it is possible that the disease will produce later serious conditions which may damage your health and indeed threaten your life. Gonorrhœa is a contagious disease. In order to avoid infecting other persons, and in order to prevent such complications as bubo, swollen testicles, abscess, stricture, etc., the following rules should be observed :

Do not drink any intoxicating liquors.

Do not drink any spicy soft drinks like ginger ale.

Do not eat any peppery, spicy foods or pickles.

Do not drink any tea, coffee or cocoa.

Do not eat any of the red meats, tomatoes or strawberries.

Do not take any violent exercise.

Do not indulge in any sexual excitement or sexual intercourse whatever, directly or indirectly, until pronounced cured, as the disease may be given to a woman even after the visible discharge has ceased. Moreover, sexual excitement always prolongs and aggravates the disease through the erections of the penis.

You must wash and dress the penis at least three times daily, as directed.

You must burn all soiled dressings.

You must wash your hands after dressing the penis, because the discharge is blinding and may be carried to the eyes by unclean fingers.

You must sleep alone and be sure that no one else uses any of your toilet articles, particularly towels and wash cloths.

Your bowels must move once every day. If you are constipated, take a small dose of Rochelle salts, dissolved in hot water, before breakfast.

You must drink all the water possible excepting during meals and up to four hours before going to bed.

You must eat chiefly milk, toast, bread, butter and eggs until otherwise directed.

You must remain quiet, preferably reclining when possible.

You must take the medicine regularly and as directed.

Treat Chordee by wrapping cold wet cloths about the penis after first emptying the bladder.

Gonorrhœa bears no relation to syphilis (hard chancre) or chancroid (soft chancre).

The medicines are intended for your own use. If given to another they may prove of no value as the treatment is entirely different during different stages of the disease.

You must come for treatment with as much urine in the bladder as possible, so that the urine may be examined at each visit.

You must take the hand injections in the following manner:

1st. Always urinate *before* taking an injection.

2d. Drop the trousers and drawers below the knees, and fold shirt up over abdomen.

3d. Seat yourself on the extreme edge of the closet seat or a kitchen chair, feet widely separated, legs extended, and retract foreskin.

4th. Injections are retained more readily when lying down. Do so if possible.

5th. Fill the syringe, hold the penis just behind the head with the left hand, press the syringe firmly against the opening, and inject slowly and very gently. Never use force in taking injections.

6th. Never use a syringe that does not work smoothly.

7th. Use only one syringe unless otherwise ordered, and retain injection five minutes by the watch.

8th. Never lend or borrow a syringe and as soon as you are well destroy the instrument.

Do not use gonorrhœa bags or cotton in dressing the penis.

"Shreds" or "floaters" in the urine show that you are not yet well and are still in a condition of danger to yourself and to any woman with whom you have intercourse.

Please report for treatment according to appointment. If detained secure new appointment by telephone.

P. DUNCAN LITTLEJOHN, M.D.,

193 York Street, New Haven, Conn.

OFFICE HOURS:

9-12 7-8

SUNDAY EXCEPTED

DISCUSSION.

DR. FRANK H. COOPS (Bridgeport): Dr. Littlejohn's plan of putting into the hands of his patients printed slips describing the main points of the home treatment of gonorrhœa is certainly a very commendable one. I have seen the plan carried out in some of the large genito-urinary out-patient clinics with splendid results. These patients, after they have studied the directions on the folders, come back to the clinic

better instructed in regard to their part in the treatment of the disease than do our private patients when they come back to the office after having received oral instructions only.

I have for some time past been thinking of getting out such a set of printed instructions, and now that Dr. Littlejohn has demonstrated its feasibility and success, I am instigated to carry the idea into action at once. I cannot do better than copy the set presented (seeing that they are not copyrighted), making a few changes to suit my own individual fancies. For instance, the instruction, "You should drink all the water possible," I should have put in bold type, for I have learned that that, above all, is the main thing in the treatment of this disease. I instruct my patients to drink at least one tumbler of water every half hour during the day, and once or twice during the night, if they happen to be awake. The irrigation of the urethra that this affords, by compelling them to urinate at least every half hour, does more good than any number of hand injections or irrigating fluids that one can pump into the urethra or bladder from the outside. These latter, together with internal medication, are to be regarded as supplementary to the water treatment, especially in the acute stages of the disease.

I agree with the writer of the paper in condemning the practice of wearing pieces of cotton tucked under the prepuce, or the so-called gonorrhœa bags. Under the water treatment, when the urethra is washed out every half hour, not enough discharge accumulates to require the use of any dressing at all. If one must use a dressing, however, especially during the night, the one recommended by Dr. Littlejohn is preferable.

The request that the patient come to the office with a plentiful supply of urine in the bladder is of the utmost importance from a diagnostic and prognostic standpoint. I would not know how to carry on the treatment of a case of gonorrhœa without having recourse to the so-called glass tests; and surely these tests give us the best information as to how the case is progressing. I believe, too, that our patients should be taken into our confidence and instructed as to the import of these various urethral shreds, etc. In this way we can get them to take more interest in the progress of their case; and, above all, it should be thoroughly impressed upon their minds that they cannot consider themselves as cured till these shreds have entirely disappeared.

A very important fact that is impressed upon the patient's mind in this folder is that the disease, under the best of conditions, is a very difficult one to cure, and that it is dangerous to experiment with patent medicines and prescriptions that are recommended by drug clerks, or by other persons who have had no special medical training.

The whole list of instructions is simple and concise, and cannot fail to be of great benefit to the patient as well as to the physician who has

charge of the case. I hope that the compiler will not stop at this, but will get out corresponding folders for us to hand out to the victims of chancroid and chancre.

DR. CHARLES S. STERN (Hartford): The subject discussed by Dr. Littlejohn is one of no little consequence, and it is no exaggeration to say that he has presented it in a masterly fashion. I can heartily endorse his conclusions, and the few words that I shall add in my discussion will be directed only to strengthen his argument. However, I wish first to mention a few modifications which I have observed to act beneficially.

In regard to the diet, the total elimination of red meat would in some cases retard the cure by reducing the patient's resistance. And, therefore, I would suggest rather that the question of high or low diet be decided according to the individual requirements.

The matter of suspensory bandage is important. Dr. Littlejohn has said they "must be well fitting," but we often find them worn in such a way that although supporting the testicles, they act detrimentally by pressure of the tape against the urethra.

As to the use of cotton to catch the discharge, I cannot quite coincide with Dr. Littlejohn, although gladly admitting the value of his dressing. A patient is much more likely to constantly renew a small bit of cotton than he will a large piece of gauze, which he certainly will avoid changing as long as it is not absolutely foul; and if the cotton be slightly moistened with a few drops of 1-6000 bichloride where it comes in contact with the meatus, it will not adhere or prevent the flow of pus therefrom.

We have heard much of "autoinfection," but it has remained for Dr. Littlejohn to suggest a definite relation between automobiling and gonorrhœa.

I believe one of the first things we should tell our patient is, that we do not know how long it will take to cure his gonorrhœa, even though it is a very recent infection. We should tell him that gonorrhœa may run a very mild or a very severe course, just like typhoid fever and diphtheria, or any other infectious disease, which may be so mild as not to confine him to bed or so serious as to cause his death, or may affect him in any degree between these two extremes.

As a prophylactic measure we should instruct our gonorrhœa patient, when using a closet, to fold a piece of toilet paper over the front of the seat. Such a precaution unquestionably is a desirable point in cleanliness and sanitation, may conceivably forefend another's infection, and is a courtesy which at least will be appreciated by an unprotected public.

One other "Don't" I would suggest—that the patient be warned against the habit of stripping the urethra in order to force its contents

to the meatus for frequent inspection. Such unnecessary handling will often force the infection into the small follicles of the canal, and it always increases and continues the local inflammation. This practice should be absolutely proscribed, just as you would forbid rubbing of an eye affected with conjunctivitis.

I think we are all agreed with Dr. Littlejohn that the criterion of a cure is the absence of gonococci (and they must be diligently searched for and eliminated from all the secretions which flow into the urethra, at several successive intervals of time). And so I would add as a conclusion to the other instructions, and in heavy type: Don't stop treatment until you are completely cured.

I thank Dr. Littlejohn sincerely for his very instructive paper.

DR. GEORGE BLUMER (New Haven): I just want to call attention to one point. It has not much to do with the treatment of gonorrhœa, however. That is, the distinction between red and white meats. It is now known that the white meats have rather more extractives, if anything, than the red. If meat is stopped, it should be meat of all kinds.

DR. RALPH A. McDONNELL (New Haven): I had not the pleasure of hearing the entire paper, but I enjoyed very much the part of it that I did hear. There were two points that I want to speak of, one being the influence of diet on gonorrhœa. I have been unable to satisfy myself that it has any influence after the acute part of the affection is over. In the beginning, I advise a milk diet. The patients almost never follow this advice; but when they do, they get control over the acute symptoms more quickly than in any other way. After this, I tell them to eat as usual, but not to overeat.

In regard to drinking large quantities of water, I think that this is very valuable; but it ought to be controlled toward the latter part of the evening, because one of the bad effects of a full bladder is priapism at night, which is manifestly unfavorable to the disease. I direct my patients to stop drinking water at seven o'clock, and not to drink any after that time.

DR. P. DUNCAN LITTLEJOHN (New Haven): I was well aware that white meats may have more extractives than the red; but most of the people of this class eat less poultry than others, especially the workmen. Therefore, that was my idea in warning them against red meat. I knew that if they did not eat red meat, they would eat very little meat of any kind.

Dr. McDonnell's point about the diet is well taken. My idea was that people who come to the physician with a new complaint or a recent infection, never having had any previous experience with trouble of this kind, should be told what to avoid in the way of eating. In chronic cases, the diet is not as important.

Gentlemen, I thank you for your kind attention.

The Management of Syphilis.

ALFRED G. NADLER, M.D., NEW HAVEN, CONN.

It is a moot question whether syphilis is or is not increasing. Possibly, owing to better methods for accurate diagnosis, or perhaps because the physician of to-day is better qualified to recognize the disease, the number of syphilitics is apparently greater. Some men with large dispensary and hospital services declare that as many cases do not appear as formerly. It is true, symptoms of the disease in newly inoculated patients are not so severe as, say, ten or fifteen years ago. On the other hand, the neurologist and the internist will show us more cases of tertiary lesions, of organic syphilis. Personally I do not believe there are more such patients to-day than ten years ago. With improved methods of studying a case and advanced laboratory facilities, with the knowledge that practically 100 per cent of paresis, 90 per cent. of tabes, and a large proportion of aortic disease is due to lues, the specialist is more apt to consider syphilis and when present, to confirm his diagnosis. The large number of patients with the late lesions must be due to insufficient treatment. Some of this can be attributed to the patients themselves, but a large, a very large share of the blame must be laid on the shoulders of the members of our profession. Either the diagnosis was not made (it is surprising how often this occurs), or else the treatment was not insisted upon for a sufficiently long period. Since the discovery of the spirochæta and the Wasserman reaction, no excuse remains for the practitioner either to fail in a diagnosis or to be remiss in his treatment.

Of course we all know that a certain percentage of patients cannot be convinced of the seriousness of their disease and the liability of future sequelæ. Putting those on one side,

there still remains those whom physicians, by their failure to prolong treatment, doom to future misery.

Not only is the treatment not persisted in, but, strange to say, although it should be well known that mercury is the cure for lues, many times mercury is not even prescribed, or if it is, in some such fashion as will make it convenient for the patient and assist him in hiding his disease. Ofttimes, too, potassium iodide is prescribed and depended upon as the remedy. Potassium iodide is *not* and *never was* a cure for syphilis. True, it helps to improve certain symptoms, especially the late manifestations, but it never can permanently influence the disease.

In this contribution I shall only consider the management of the usual everyday forms of syphilis.

In the management of syphilis there are three questions to be answered:

When to begin treatment?

How to treat?

When to stop treatment?

When to begin treatment? Answer—As soon as the diagnosis is made. When can we make a diagnosis? In practically every case, at the first visit or very soon thereafter.

In 1905 Shaudin and Hoffman declared the spirochæta to be the cause of syphilis. There is no need for me to relate the history of previous attempts to find the luetic germ and their failures. Since Shaudin's discovery, much work has been devoted to disprove his claim, but now, although all the conditions of Koch's law have not been fulfilled, nevertheless the best investigators universally acknowledge the *treponema pallida*.

When a patient with a suspicious sore first presents himself, a smear should at once be examined for the spirochæta. The technique is very simple and the latest improved methods for staining make the task a light one and the time required comparatively short. Should the spirochæta not be found at the first examination, a mild cleansing lotion is prescribed

and the patient instructed to return within two days, when a second smear is examined. Sometimes, very seldom, it is necessary to wait for secondary symptoms to appear. But for anyone with a little experience and with some care in the technique, the microscope will almost invariably make or confirm the diagnosis. An undoubted chancre with its attendant symptoms is readily recognized. Even in such cases it is well to confirm the diagnosis. Everyone has seen such initial lesions as baffle the most expert diagnostician. In these cases the microscopical examination clears up the diagnosis and saves much valuable time.

The treatment:

Excision of the chancre.

My own experience is limited to one case and that so recent that the effect on the future progress of the disease cannot be stated.

Excision of the chancre was done in the sixteenth century. One hundred years ago Hunter used the method. Later Ricord advocated it. Thirty years ago it became again the fashion, only to be abandoned. Recently the Vienna School revived the practice.

The chancre should always be removed when convenient, but the patient should be treated just as if the operation were not attempted. The presence or absence of enlarged glands does not influence our action. When glands are not perceptible, we may in some cases remove the entire focus of the disease, freeing the patient from further manifestations. On the other hand, when the glands are present, the excision of the chancre removes a host of active infecting agents from the system. Always bear in mind, however, that the treatment must be conducted in the same manner as if the procedure were omitted.

The syphilitic chancre should never be cauterized. The destruction is often extensive and the result frequently undesirable.

Mercury can be given in three forms.

I. Externally	{	Inhalation.
		Suppositories.
		Ointments.
II. Internally	{	Liquids.
		Pills.
		Powders.
III. Injections	{	Subcutaneous, soluble salts.
		Intramuscular, insoluble salts.
		Intravenous.

The methods for internal administration are the weakest, should never be used except when conditions prevent the use of inunctions or injections.

Treatment by suppository is also inefficient, owing to the small absorption.

The old method of inhalation, viz., with the cabinet and vapor bath, is entirely abandoned, owing to the severity and danger of the method. At present we use, very often with good results, the Welander sack or the Mercolint apron or the Kromayer mask, all intermediate cures.

Administration by inunction is one of the main and best methods. It is really an inhalation of the drug. The contraindications are idiosyncrasy against mercury, eczema, ichthyosis, hypertrichosis, and other skin diseases.

From three to five grammes of the unguentum hydrargyri diluti, U. S. P., freshly prepared, should be gently rubbed in daily, the body to be divided into five areas—calves, thighs, belly, arms, back—one area being used each day. Five days' treatment is one tour. The next day a hot bath is taken, the seventh day a rest, then the tour is repeated. Six tours constitute one main course. The rubbings should be made at night in a hot room. The method is ideal in hospital and institutional practice, but it is difficult to use with private patients for obvious reasons.

I am not qualified to discuss intravenous injections, having had no experience with the method.

Injections, intramuscular and subcutaneous, were practiced by Scarenzio forty or more years ago, but it is only within the last eight or ten years, since we learned to avoid the dangers, that the method has become popular. The advantages are regularity of treatment, absorption of mercury more certain, stomach is left free for reception of other medicines and gastro-intestinal system is not disturbed, less chance of stomatitis, physiological effect more marked, and it is convenient for the patient. The disadvantages are the pain which may accompany the injection. Sometimes there is left a deposit of mercury which is suddenly absorbed, producing marked poisonous effects. This cannot always be guarded against and when it occurs, one is almost helpless to prevent the continued absorption. The node may be cut out, but the system may have absorbed so much mercury that the procedure is useless.

The intramuscular injection of insoluble salts of mercury produces a deposit of mercury which is slowly absorbed and consequently slowly eliminated. Soluble salts, injected subcutaneously, are absorbed quicker and more rapidly eliminated. This difference offers the indication as to which to use. From clinical experience we know that that preparation of mercury which is not so quickly absorbed and eliminated has a more profound action upon the severe manifestations of syphilis. For that reason, where a quick reaction is indicated, as in cerebral lesions, eye or heart affections, calomel, which is very slowly absorbed and not so quickly eliminated, gives the best results; while, ordinarily, where a prolonged action of mercury is required, sublimate or other soluble and insoluble salicylate preparations are indicated.

There is a great dispute amongst eminent and experienced syphilographers concerning the expediency and efficacy of the injection method. Lambkin reports about 20,000 injections without a single mishap. Neisser uses both inunctions and injections. Finger prefers inunctions for hospital patients, but uses injections also. To dispensary and private patients injections are given.

No single method should be adopted for a routine treatment and used indiscriminately. The physician must be familiar

with the application of all methods. Personally I prefer inunctions, and where conditions are right and the patient can be persuaded, I always prescribe this method, holding injections as a reserve force.

There can be no routine plan to follow for the treatment of syphilis. One thing is certain, that every patient, whether relapses occur or not during the first two years, must have active mercurial treatment. The periods in which we discontinue the use of mercury depend entirely upon the individuality of the patient and the manner in which he reacts. The basis of our treatment is to introduce into his system as much mercury as possible without injury.

How long shall treatment be continued? The answer involves greater difficulty than the first question and is the cause of as much if not more argument because naturally it leads to the question, Is syphilis ever cured? Hutchinson reported a long series of cases of reinfection. Fournier claims he never saw one. When savants disagree, what course can the ordinary individual pursue?

Those who argue for the curability of lues point to the Wasserman reaction, considering repeated negative reactions an indication of the cure of the disease. A negative reaction offers a somewhat better prognosis, but it may be followed by relapses, while a positive reaction may never be succeeded by later symptoms.

The first two years' treatment is the most important period for the patient and upon its thoroughness depends largely his future well-being. Treatment should be actively pursued for at least five years; by that, I mean the treatment should be persistent for three years, less energetic during the next two. He should be under observation the next several years, with the occasional administration of the drug. In fact, it is best for the patient to undergo treatment for three or four weeks each year during his lifetime.

During the course of the treatment it is essential to watch the kidneys, the eliminative tract, the mouth, and the general condition. Before placing the patient under the influence of

mercury, examination should be made for the possible presence of a kidney lesion, independent of the syphilis. Upon its presence or absence rests the selection of the method of treatment.

It is well to prevent stomatitis, if possible. I do not think that mercury is the cause of stomatitis. It is, rather, due to a poor condition of the mouth. The teeth and gums should always be put into the best possible condition before any mercury is administered. Should stomatitis appear, stop the drug, use a mild antiseptic mouth wash, not potassium chloride, and give supporting treatment.

Time will not permit me to enter into the presentation of the social aspect of syphilis, especially its relation to marriage.

In conclusion: I consider inunctions preferable to injections. Treatment should be advised for a long period of years, perhaps for life. It is better to treat too long than not enough.

DISCUSSION.

DR. RALPH A. McDONNELL (New Haven): There are two or three points about this paper which attracted my attention, the paper, as a whole, being altogether too brief to satisfy my desire for more. It was comprehensive for the small time allotted to it, but did not go into details enough, I thought.

Several things struck me particularly. One was the excision of the chancre. I have seen a good many cases, and nearly always find it inconvenient to cut the chancre out. It is always sore and in a place that patients do not like to contemplate cutting. When you cannot promise them that cutting the chancre out will do any good, I do not see any advantage in insisting upon it.

Another point was the diagnosis by means of the microscope. I do not find that it is as easy to get the spirochæta as would be indicated by the paper. There is a rumor now circulating about some kind of India ink that people hope may be important soon in making it easy to see and detect these organisms, but I have not seen this yet; so I am not able to make the diagnosis easily by means of the microscope, although it can be done with proper technique.

In regard to the matter of starting the treatment, I am not sure that the inability to find the spirochæta does not work to the advantage of the patient. I think that it is true that the system acquires a certain power of opposition to this disease, as time goes on. I believe that, unassisted, there are certain forces elaborated by the system that contend with the disease. It is well to let the patient go untreated for a

time, even though the diagnosis may have been made. I give tonics for the anæmia, rather than mercury for syphilis, at the beginning of the disease. No man should say that every other man is wrong. Dr. Bulkley of New York uses mercury internally, and his results are excellent and he compares them favorably with the results obtained by injection and inunction. His results are not less good than those secured by the other methods, but it takes technique and experience to do these things right. My preference is for the injection of an emulsion of metallic mercury. This I have given in over one thousand injections, without untoward results. No bunches formed that suddenly exploded and intoxicated the patient, and nothing else occurred beyond pain for two or three days after the injection. The method is efficacious and good and secretive. The injection of this metallic mercury controls the most severe manifestations of the disease. I have seen absolute, total blindness, years after the infection, recovered from after a few injections, and I have seen various late manifestations of the disease controlled after a few injections. Comparing the results obtained in this way with those secured earlier by means of pills, mixed treatment, and inunctions, I think that the last method is the best with which I am acquainted.

DR. THOMAS M. BULL (Naugatuck): I have been much interested in reading the article by Dr. Nadler on the management of syphilis. He has certainly outlined the subject in a very happy manner and I wish to add my testimony to corroborate nearly every point made, and I wish especially to emphasize the following:

Physicians should be more careful to diagnose syphilis. Do not let any of the ordinary certificates of character blind you to the fact that a suspicious disease may be syphilis, for if you leave one contagious case undiagnosed, an untold amount of harm may be done.

In conversation recently with a doctor of large practice, he told me he had not had a case of syphilis in ten years. One of two things is true—either he has a set of very moral or discreet patients, or he does not recognize the disease when it presents.

A few years ago I was called to treat an old physician's wife in a very advanced state of the disease, of the nature of which he was ignorant. I have used every method of treatment the doctor describes, except the intravenous, but in practice we use only three methods of introducing mercury—stomach, skin, and injections. Inasmuch as 99 per cent. of medicine is given by the mouth, and it is the natural way for anything to enter the blood, I must confess to a predilection for this method. There is practically little danger of irritating the digestive tract if you see the patient frequently and grade the dose carefully to the conditions seen. Although the disease is capable of the most ter-

rible consequences, I believe it to be the most easily treated of any of equal gravity. The results, when a doctor is able to see the patient frequently, are usually happy, and the crucial point is to keep the patient under the doctor's care for several years—two or three of active and two or three of intermittent treatment—and I would strongly advise any patient who has ever had syphilis to take a month's mixed treatment every year, whether symptoms have ever developed or not. To keep a patient under treatment so long will tax the personal magnetism of the best physician, but in justice to the patient, all means should be employed to that end and to keep the patient interested—such as frequently changing the forms of medicine, frequent physical examination, etc.

I, personally, keep on hand at least twenty-five different kinds of treatment for this purpose. I always supply the medicine myself, for to give a patient a prescription and turn him into a druggist's hands is not conducive to the best interests of the patient or doctor. He needs your services and you have time to sell, so you should work together until no danger of future relapses remains.

I, personally, believe that the very best treatment must be prophylactic and preventative, and I believe that the physicians of this university city, where there are thousands of transient young men, have a splendid opportunity for altruistic work along these lines. If we as physicians could do something to dam the stream at its source, it would do more to help on humanity than almost any other service we are liable to render.

In conclusion, I wish to thank Dr. Nadler for his paper, as I always feel a sense of personal obligation to anyone who has taken the time and trouble to state an important truth clearly, succinctly, and honestly, as he certainly has done in this communication.

DR. CHARLES C. BEACH (Hartford): When I read this paper, a copy of which Dr. Nadler kindly sent me, the first thing that impressed me was the matter of diagnosis. It is absolutely essential, in treating syphilis successfully, to make the diagnosis. A man who treats heart disease for pneumonia may treat it successfully; but you cannot cure syphilis unless you give mercury, and you do not give this unless you are sure what you have. I have seen syphilis treated for urticaria and other skin diseases, and also for epithelioma. I presume that the ideal treatment is by injection or inhalation, but I never use either of them. When I was in Vienna, twenty-five years ago, they were using injections of succinate of mercury; but I have found no difficulty in giving the protiodide, as the New York men do. Nothing is more important than the proportion of the dose in each individual case. We get sufficiently good results by the internal treatment by the mouth.

One thing that has not been touched upon is the matter of controlling syphilis. We are supposed to keep as professional secrets the names of those who suffer with syphilis, but I believe that cases of this disease should be reported with the same care as scarlet fever or any other contagious disease. We should use our discretion, however. Some patients are intelligent, and have sufficient regard for their fellowmen not to spread the disease; but others have not, and I think that these cases should be reported. I know of two women in Hartford, both of whom have the disease. Both have children, and are sleeping with them. One is a public prostitute, and is in the active stage of syphilis. I saw her twice, and she then went to another physician—so you cannot follow these cases up. Such cases we should be compelled to report.

DR. OLIVER C. SMITH (Hartford): In a recent meeting of the county society at Hartford, Dr. Robert N. Willson of Philadelphia stated on good authority that 50 per cent. of the male population suffer from Neisserian infection, and that one million and a half women are sick from that cause. If that is true the study of this disease is as important as that of tuberculosis; and it is true that, for some reason, the profession, as well as the laity, are inclined to treat it lightly. It is a very serious problem, and I am glad that Dr. Nadler has touched upon it. I believe that the place for such patients is in the hospital, in bed on their backs. They have no right to go about disseminating the disease. We are remiss in allowing them to do so when in the active stage of the infection. A good many will go into the hospital, if it is impressed upon them how important it is to do so, for their own sakes, as well as for others of the community and their families. They are taught in the hospital to treat the disease themselves, and about the importance of asepsis and cleanliness, as they cannot be when receiving treatment promiscuously.

In the case of students, this is especially important. We should try to educate the communities in which we practice concerning the great importance of these two terrible infections. If we do this conscientiously, there will be less spread of the evils, and we shall do our duty as we have not done it in the past.

DR. RIENZI ROBINSON (Danielson): I should like to ask the author of the paper whether he would prefer mercurial treatment of the tertiary manifestations of syphilis to the iodide. I remember a case of syphilitic iritis in which the anterior chamber was filled with pus. I gave 150 grains of iodide of potash for ten days, 100 grains for the next ten days, and 75 grains for the ten days following, the result being a clearing up of the infection; and I should like to ask whether he would have treated the case with mercury, rather than with the iodide.

DR. CHARLES S. STERN (Hartford): Dr. McDonnell's method is good, and is the one generally used. In Dr. Keyes' book, he says the treatment that his father used is still used with good effect, and is as thorough and satisfactory as the injection treatment.

I wish to speak about one other point in Dr. Nadler's paper. He mentioned the Wasserman reaction as being of considerable diagnostic importance, but I do not believe it has the same standing among physicians at present as it had a year ago. Either positive or negative, it is not to be depended upon.

DR. P. DUNCAN LITTLEJOHN (New Haven): I should like to thank Dr. Nadler for his interesting paper. I was glad to hear Dr. Smith dwell upon the prophylaxis in the manner that he did. I thoroughly agree that gonorrhœal patients are better off in the hospital, though you cannot keep syphilitic patients there. Unfortunately, we do have a good many cases of gonorrhœa among the students in this town. A number of those who have treated them agree with me that it is difficult to treat them without sending them to the hospital; but, unfortunately, they are not allowed to go to the infirmary of the university, so that there is only the public hospital left. It is sometimes difficult to convince a university man that he should go anywhere else than to Yale Infirmary, but the rules of the university do not allow the infirmary to take gonorrhœal patients.

DR. ALFRED G. NADLER (New Haven): With reference to the Wasserman reaction, I would say that it is not considered so valuable now as formerly. I think that I mentioned in my paper that even negative reactions do not indicate a cure of the disease.

I should treat the iritis with intramuscular injections of calomel, and give potassium iodide.

I did not enter into the sociological question at all.

Chancre should be excised, when convenient. It may be located where it can be conveniently removed; and in that case, its removal will take away a host of infecting agents that are a great danger to the system.

Regarding the question of making an early diagnosis, I think that the spirochæta can be readily discovered under the microscope with the so-called dark-ground illumination, or by staining with pelikan.

A Consideration of the Anatomy and Clinical Importance of the Subdeltoid Bursa.

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During the past few years great strides have been made in our understanding of that class of conditions commonly referred to as periarthritis of the shoulder. These advances involve so many considerations that it becomes necessary for us to entirely reform our conceptions regarding these disabilities. Codman (1), whose work along these lines has been so complete and so extensive, says that lesions of the subdeltoid bursa are more common than any others in the shoulder joint and that more cases seek hospital relief for subacromial bursitis than for all other lesions of the shoulder joint, including tuberculosis and fractures. Prior to the enlightening work of Codman (2), Finney (3), Baer (4), and Painter (5), all these cases were grouped as periarthritis, or fibrous ankylosis. If one doubts their great frequency of occurrence, one needs only to recollect that many of them are suffering under such diagnoses as neuritis, muscular rheumatism, circumflex paralysis, contusion of the shoulder, fibrous ankylosis, periarthritis, gout, etc.

Anatomy:

The subdeltoid bursa is a large "sac which intervenes between the acromion process and deltoid above, and the upper aspect of the capsule of the shoulder joint below. It facilitates the play of the upper end of the humerus with its capsule on the under aspect of the acromion process and deltoid. x x x In some cases it is divided into two or more chambers or loculi" (Cunningham). When this occurs, the parts are referred to as the subacromial bursa and the subdeltoid bursa respectively. For practical purposes, however, it is not essen-

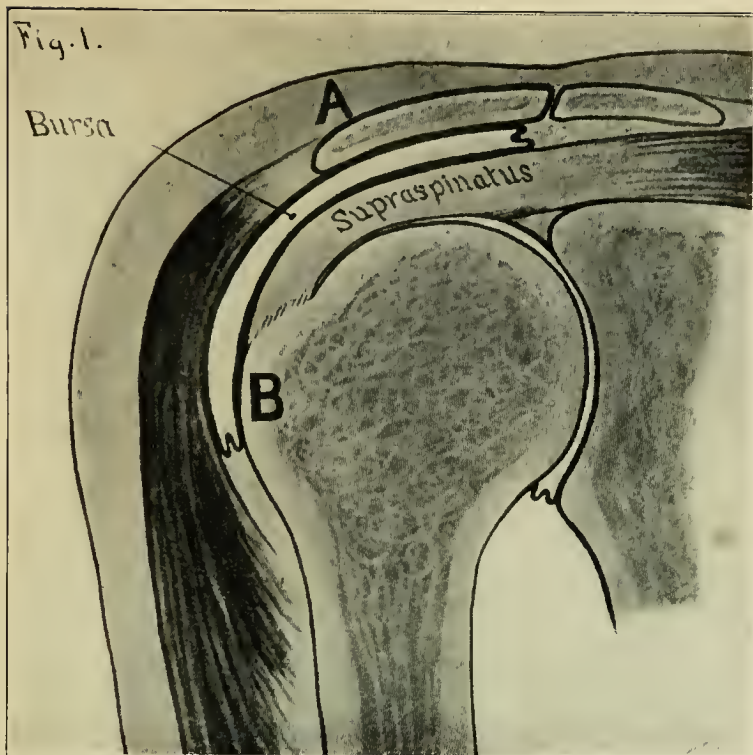


FIG. 1 a. After Codman.

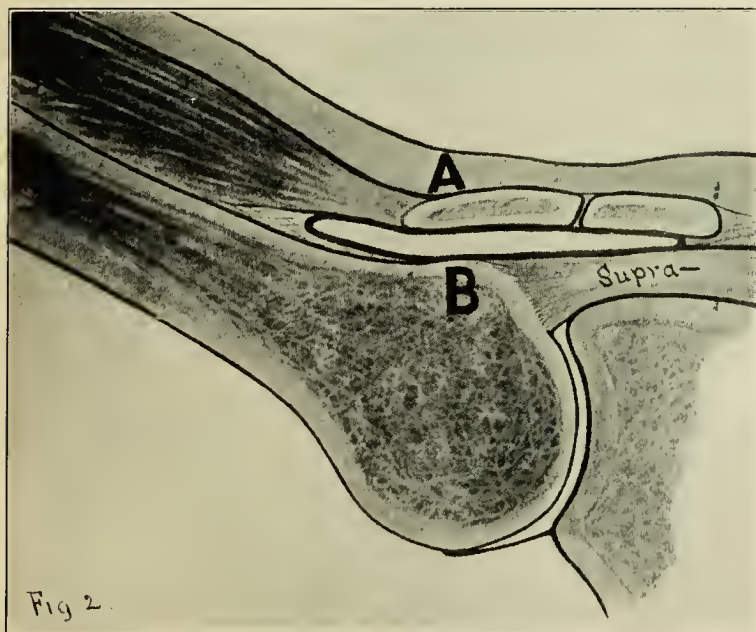


FIG. 1 b. After Codman.

tial to differentiate between these two bursæ, as they are parts of each other and their identity is best merged. The size of the bursa varies within certain limits—roughly, from the size of a silver dollar to that of the palm of the hand. The base of the bursa is attached to the greater tuberosity of the humerus and to the expansion of the supraspinatus tendon. The roof is firmly attached to the under side of the acromion and the coracoacromial ligament (Figure 1). The periphery, however, is loose and this, rolling on itself, allows the roof to slide on the base (Codman). In internal rotation and abduction of the arm the greater tuberosity of the humerus passes directly beneath the coracoacromial ligament and with the tuberosity goes the bursa at the same time. A reference to Figure 2, which represents a bursa injected with wax, shows how impossible it is for an enlarged or inflamed bursa to pass beneath this ligament, and hence the constancy of loss of internal rotation and abduction as symptoms of subdeltoid bursitis. Moreover, in abduction of the arm, the greater tuberosity passes beneath the acromion process and functioning normally the intervention of the subdeltoid bursa allows this movement to occur without injury to the deltoid muscle, which otherwise would be carried under the acromion process and pinched. In other words, the bursa acts as a joint or hinge between the tuberosity and acromion and serves as an effectual buffer to prevent injury to the muscle which lies between these two bony prominences.

We have seen (Figure 1) that the base of the bursa is attached to the expansion of the supraspinatus tendon and this relationship has an important bearing on the etiology of certain of the inflammatory conditions of the bursa. Occasionally the supraspinatus tendon becomes ruptured and, as a result, the bursa is irritated. Now the deltoid acting alone can not abduct the humerus, as it raises the head upwards till it comes into contact with the acromion process; here it is locked and further abduction (beyond 30°) is not possible. This is what occurs in rupture of the supraspinatus and in such cases, unless the bursa is also inflamed, the arm may be abducted passively,

but can not carry out this movement actively. The exposed position of the bursa, lying as it does directly beneath the muscle and on the point of the shoulder, renders it especially liable to injury, and its function of protecting the deltoid above and the humeral tuberosity below—acting as a buffer between these two opposing forces—completes the chain of circumstances which make it seem wonderful that the bursa escapes constant injury rather than peculiar that it is so frequently in trouble.

Pathology:

The subdeltoid bursa is a serous surface and is, accordingly, subject to the same kinds of inflammatory reactions as the other serous membranes of the body. The result of the inflammation depends upon the cause to a large extent. In mild cases the walls of the bursa are normal and the sac contains an extra amount of fluid. Sometimes the walls are greatly thickened and the sac filled with dense adhesions, binding the roof and base of the bursa together. In other cases, the walls are of normal thickness and a few fine adhesions are present in the sac. In septic cases, pus fills the cavity and here the walls may or may not be thickened, according to the length of time the process has existed. In tuberculous cases, the sac contains cheesy material and the walls are apt to be greatly thickened. In a few instances calcareous deposits have been found in the cavity.

Etiology:

Codman (6) divides the etiological factors into three definite classes, namely, trauma, fixation and sepsis.

Trauma may consist in direct blows, overexertion, sudden muscular effort, etc. Fixation of the arm for the treatment of various conditions may lead to the secondary inflammation of the bursa. Gonorrhœa, rheumatism, grippe, etc., may affect the bursa. Suppurative and tuberculous inflammations also occur at times. Trauma, however, is by far the most frequent cause of trouble and in making this statement it must be urged



FIG. 2. Illustrates the subdeltoid bursa injected with wax. After Baer.



FIG. 3. The arrow indicates the thickened bursa.

that bruising is quite as likely to result from overuse or overexertion as from a direct blow or fall. The constant use given by a baseball pitcher, for instance, or continued movements of the arm, as those made by tailors and leather workers, are examples of overuse which result in a definite traumatic inflammation. Again, unaccustomed use, such as a ball player might indulge in while not in condition, frequently causes a traumatic inflammation of the bursa. Hence the frequency of "glass arms" during the early part of the ball season. It is important to insist upon this point, for so many of these cases are purely traumatic, that, unless one keeps in mind the influence of traumatism from overuse, confusion in diagnosis may occur. The writer has seen one case evidently the result of swinging a golf club and, no doubt, there are many similar instances.

Symptoms:

Subjectively pain is the symptom most trying for the patient to bear, and though it is present in practically all cases, it varies within such wide limits that it may easily be misinterpreted. It is usually worse at night, being aggravated by the patient's inability to assume an attitude which does not cause pressure on the bursa when the muscles become relaxed in sleep. The pain may be constant, spasmodic or neuralgic in character, or it may be present only on attempts at certain movements. It often radiates down the front of the arm along the bicipital groove and is sometimes referred to as originating in the upper or middle third of the arm. Usually it does not radiate toward the neck, but occasionally this characteristic is manifested and it may even radiate to the upper part of the thorax, causing neurasthenic patients much worry. As a general thing, the pain is referred to the exact location of the bursa and from here it radiates down the arm. As can readily be imagined from the position of the bursa, pain is usually less when the arm hangs at the side, and thus in putting the shoulder at rest by immobilization, the sling position should not be employed, because the internal rotation

and pushing upward only increase the discomfort. Tenderness is present over the site of the bursa in most cases and this definite localization is a strong diagnostic point.

Limitation of motion varies in degree; there is invariably a slight amount of motion and not complete ankylosis. As we have seen, the principal obstacle to movement is the fact that the thickened bursa cannot slide under the coracoacromial ligament and hence motion is chiefly limited in the directions which call for this occurrence. Internal rotation, therefore, and abduction, are notably lessened, though at the same time a few degrees of either one of these movements are always present, as they occur before the bursa comes into contact with the ligament. If the bursa is merely inflamed, the rigidity is due to the involuntary muscle contraction and not to definite obstruction. In such cases, full anæsthesia develops a freely movable arm and this may lead to a needless confusion in the diagnosis. The essential limitations of motion, therefore, are abduction and internal rotation, and the degree of this limitation may vary all the way from a slight catch to almost complete ankylosis. That is, in a chronic case of long standing, the only pain manifested and the only limitation of motion to be observed occur just as the slightly thickened bursa catches when it comes into contact with the coracoacromial ligament; but, the bursa not being so thickened as to render the passage impossible, the pain and limitation disappear when, with a little jerk to the arm, the passage occurs. Even in the most severe types, however, a few degrees of painless motion in abduction and internal rotation are possible, unless the shoulder joint is also inflamed, and this is a strong diagnostic feature in differentiating between periarthrititis and arthritis. In one case observed by the writer, pain was troublesome at night, but limitation of motion was not a source of great annoyance, as the patient was able to abduct his arm to the full extent, though he did have inconvenience in reaching back to his hip pocket. In the milder cases in women, inability to reach up in arranging the hair is one of the earliest and most trying evidences of disability. Flexion and extension of the arm are always free, except in the very acute cases where muscular

rigidity locks all the movements. This fact aids in differentiating the condition from a true arthritis.

Atrophy of the deltoid, supra- and infra-spinatus muscles is present in the old cases. The question of the circumflex paralysis can readily be settled, however, as these muscles react normally to electrical stimulation.

An X-ray examination may be positive in two ways. First, by showing a shadow at the location of the bursa, as illustrated in Figure 3. Secondly, by excluding any osteoarthritic condition of the joint or fracture of the tuberosity of the humerus, the diagnosis of inflamed bursa is the only condition left to account for the symptoms. This must be borne in mind, as mistakes are often made on account of the prevalent impression that any inflamed bursa will throw a shadow. Only the very chronically thickened bursæ, or ones containing calcareous deposits, do throw a shadow; but the picture, by excluding any bone or joint disturbance, may yet be just as positively diagnostic of subdeltoid bursitis.

Diagnosis:

Diagnosis depends upon the above signs and symptoms, which in brief recapitulation are: Pain in the shoulder, often radiating down the arm, which is worse on attempts at motion and at night; tenderness over the site of the bursa and occasionally swelling; limitation of movements, particularly of abduction and internal rotation; presence of thickening in region of bursa, as evidenced by a skiagraph or, at least, absence of bony or joint changes to account for the symptoms. Taken in connection with a history of trauma of some sort, these factors lead to a conclusive diagnosis of subdeltoid bursitis. The condition must be differentiated, however, from ankylosis, and tuberculosis of the shoulder joint, circumflex paralysis, acromioclavicular arthritis, inflammation of the shoulder joint, fracture of the humeral tuberosity, neuritis and muscular rheumatism.

From ankylosis of the shoulder joint it may be differentiated by the lack of free forward and backward motion in ankylosis, by the presence of a few degrees of painless abduction in bur-

sitis, by the lack of characteristic X-ray findings and absence of local tenderness over the bursa.

Circumflex paralysis may be distinguished from subdeltoid bursitis by the presence of the characteristic findings upon electrical tests and by feeling the contraction of the deltoid fibers when the patient attempts to abduct the arm.

Inflammation of the shoulder joint presents pain upon attempts at all of the movements, whereas in subdeltoid bursitis alone there are always present a few degrees of painless flexion and extension, abduction and internal rotation. Tenderness of the joint by palpation through the axilla is absent in subdeltoid bursitis. The X-ray is a valuable asset here, for if the edges of the bones show signs of disease, the true joint must be involved.

The signs and symptoms in fracture of the greater tuberosity may closely simulate those of subdeltoid bursitis, but a history of acute trauma supplemented by the presence of ecchymosis and a positive X-ray picture should easily establish the diagnosis.

Muscular rheumatism as a distinctly local manifestation is rare, and when it does occur in the shoulder region it lacks the limitation of motion characteristic of subdeltoid bursitis. Beginning tuberculosis of the shoulder joint is often puzzling, as the pain and limitation of movements are quite similar. Moreover, it is believed that tuberculosis often originates in the bursa. An X-ray picture showing the involvement of the true joint, or the result of a tuberculin test, will settle the diagnosis. Acromioclavicular arthritis sometimes presents a clinic picture much like that of subdeltoid bursitis, but the presence of tenderness and thickening at the acromioclavicular joint are usually easily demonstrable and conclusive evidences of trouble in this joint.

Brachial neuritis is the condition most difficult of differentiation, especially in the adherent cases with pain. It is supposed, however, that many cases of neuritis are actually caused by the inflamed bursa—at any rate treatment directed toward the bursa frequently yields relief in cases of this character.

Treatment:

The objects of treatment are to relieve pain and permit motion. Pain is caused by the contusion incident to the contact of an inflamed bursa with its surrounding structures; or by the stretching of adhesions between the floor and the base of the bursa, which occurs when the lateral folds begin to roll upon themselves during motion; or by both of these factors combined. Motion is obstructed, as we have already seen, by the inability of the thickened bursa to slide underneath the coracoacromial ligament, or by the involuntary muscular contraction which attempts to prevent further contusion of an already inflamed bursa; also by the inability of the lateral folds of the bursa to roll upon themselves, being firmly held by adhesions.

In order to determine just how these elemental indications for treatment are to be met, it is advantageous to divide the cases of subdeltoid bursitis into three clinical groups, as follows:

I. Recent acute cases characterized by spastic rigidity of the joint.

II. Chronic adherent cases.

III. Mild chronic cases, characterized by persistence of the full arc of motion.

GROUP I. Includes the recent acute cases, characterized by spastic rigidity of the joint, wherein the bursa is acutely inflamed and motions of one part upon another cause pain similar to the pain induced by movement in acute inflammation of any serous surface. Pain in this type may be relieved, therefore, by putting the parts at rest, either by means of a splint which maintains the arm at right angles to the body, or by strapping the arm to the side of the body. Counterirritation, dry hot air, or other means for inducing local hyperæmia are beneficial in hastening absorption. As soon as the pain will permit, passive movements should be employed, to prevent the formation of adhesions.

GROUP II. These are by far the most common and include the chronic adherent cases, characterized by adhesions rather

than by spastic rigidity. Originally Codman recommended, in addition to the old plan of breaking up the adhesions, that the arm should be put upon an abduction splint after manipulation under an anæsthetic. The reason being that as soon as the adhesions were broken up, there was an immediate return to the original condition of type I, and by the time pain had sufficiently subsided to allow movements, adhesions had reformed. This was a distinct advance over the older method, but the recovery was slow, the pain extreme, and the effect upon the patient's nervous system often disastrous. Painter (5) and Baer (4) first suggested *open* operation and removal of the bursa, a thing which Codman originally could not believe justifiable, as he felt the bursa to be indispensable to the functions of the arm. This latter method, however, has proved so successful, so great a time saver and, moreover, it involves so little risk, that it has been generally accepted as the best routine measure. In detail, the operation consists in making an incision through the deltoid fibers parallel to the long axis of the humerus midway between the coracoid and acromion processes. Just beneath the muscle the bursa is found and is easily discernible if it is enlarged or if the walls are thickened, but, in case the walls are thin, it is easy to entirely overlook it. The bursa should be removed in its entirety, if possible; in case the subacromial portion is very much enlarged, complete excision may not be feasible and in this event one should remove as much as may be. The arm should then be put through its entire range of motion. The muscle fibers are to be approximated by a continuous suture and the skin closed in the ordinary way. The arm is dressed in a Velpeau bandage and at the end of a week or ten days the stitches are removed. Passive movements are then gradually begun, hot fomentations are employed and the limbering up process vigorously pursued. Pain of limited amount persists for several weeks, but as a rule, patients are able to resume their occupations in a few months at the outside. Painter reports the case of a physician who was able to take up his practice again after two weeks, and Baer reports the case of a plasterer who returned to his work on the eighteenth day following the operation.

GROUP III. Includes the chronic cases of mild character characterized by pain on certain movements and by great thickening of the bursa walls. The distinguishing feature of this type is the persistence of the full arc of motion. If localized, tenderness is present in a case of this variety, then a distinctly pathognomonic sign called the Dawbarn sign is also demonstrable; namely, when the arm is abducted, the bursa as we have seen passes beneath the coracoacromial ligament and hence the tender point disappears beneath the acromion process and is no longer to be detected. The radiograph in this type of subdeltoid bursitis is usually positive, as the process is so chronic as to result in a marked increase in the density of the bursa walls.

Although it is generally understood that instances of type II are by far the most common, the writer feels that the mistake of not recognizing type III is frequently made and it is the special object of this paper to bring this matter to your attention. It is not asserted that subdeltoid bursitis of the type which does not obstruct motion is more common than the type which does obstruct motion; but it is most earnestly urged that instances of the latter type are quite often met with and almost as often overlooked, because of the prevailing idea that limitation of motion is an essential feature of subdeltoid bursitis. Another factor which leads to confusion is the variability of the symptoms in this type of the cases. Local tenderness, for instance, is often absent. Pain may be present on raising the arm and absent on lowering it, or vice versa. Again, the symptoms may all disappear for days at a time, only to reappear after some trifling overexertion or, as the patient feels, without any real excuse.

Operative treatment in this type is not so urgent a necessity as in type II, and this point must be emphatically insisted upon. The fact that such a large proportion of the cases of subdeltoid bursitis are proper operative cases has led to the popular impression that a diagnosis of subdeltoid bursitis means a surgical operation. In many of these cases the patients are vastly relieved and improved as soon as a correct diagnosis is given them and the worry about rheumatism, neuritis and

ankylosis is removed. Usually, rest for a short period by avoiding the movements that cause pain, such as putting the arm into a sleeve, reaching up to the back hair, etc., suffices to alleviate the symptoms. Mild counterirritation, massage, baking, vibrations, or active hyperæmia by means of Bier's cups, are all of great help in relieving pain and in decreasing the thickening of the bursa. It may occasionally be necessary to immobilize the shoulder by strapping the arm to the side of the body for a few days, and in the rare instances when these measures are not successful operation is indicated. The suppurative cases are to be treated along the well-known lines and the ones due to rheumatism are relieved by antirheumatic medication.

In conclusion the following points may be enumerated as being of practical importance:

I. That lesions of the subdeltoid bursa are more frequent than other lesions in this region, including fracture and tuberculosis of the shoulder.

II. That the old term, periarthrits of the shoulder, is not definite and usually refers to the subdeltoid bursitis.

III. That the exposed position and peculiar function of the bursa renders it specially liable to inflammation.

IV. Although the vast majority of the cases are best treated by excision of the bursa, there are nevertheless many instances wherein limitation of motion does not exist and treatment of this class by means of rest, massage and counterirritation is usually sufficient.

V. Diagnoses of rheumatism, tuberculosis, paralysis, ankylosis or neuritis should not be made till the possibility of subdeltoid bursitis is excluded.

REFERENCES.

- (1) Codman: *Boston Medical and Surgical Journal*, October 22, 1908, etc.
- (2) Codman: *Boston Medical and Surgical Journal*, Vol. cliv, p. 613, 1906.
- (3) Finney: *Johns Hopkins Hospital Bulletin*, 1894, p. 83.

- (4) Baer: *Johns Hopkins Hospital Bulletin*, Vol. xviii, Nos. 195, 196, June, July, 1907.
- (5) Painter: *Boston Medical and Surgical Journal*, March 21, 1907.
- (6) Codman: *Boston Medical and Surgical Journal*, May 31, 1906.

DISCUSSION.

DR. ERNEST H. ARNOLD (New Haven): The investigations regarding the bursa of which Dr. Swett's paper treats are the logical outcome of the investigations on the behavior of bursæ in general, and the wonder is that investigations to that effect have not been made earlier. Some of these bursæ are apt to have trauma occur to them much more frequently than the subdeltoid bursa. A bursitis of intractable character, due to continued trauma, is met with in the patellar bursa. Housemaid's knee, caused by constant kneeling, either in prayer or in scrubbing, is an instance of this, and also the inflammation that goes with typical hallux valgus. We likewise note that these bursæ (for instance, the ones at the kneejoint) inflame without any trauma. We get a certain number of cases in which no great trauma has at any time been received, and in which repeated slight trauma from kneeling cannot be held responsible for the chronic inflammation of the bursa. There must be, then, accepted at once the possibility of these bursæ partaking of the same inflammations that the joint itself is liable to have—the infective ones that Dr. Swett mentioned, of course, offering themselves immediately; and there is no doubt that they cause bursitis in all situations in which arthritis of the same type occurs. We must be prepared to meet bursitis of an infectious nature in the subdeltoid region. All these infections leave the bursa permanently thickened; and such a bursa must be not only useless, but a great impediment to the function of the joint, which is certainly much better off without it. That removal of the bursa in the knee has not been done much oftener, is an unexplainable fact. For the reason that it is not so conspicuous or easily made out as bursitis in the knee, we have some excuse for not appreciating the consequences of the bursitis in the situation described by the author. These bursæ participate in the degenerative processes of the joint, or in the trophic arthritides, such as atrophic and hypertrophic arthritis, or arthritis deformans. All these will affect the bursæ, usually by thickening them; and they then also become useless and an impediment to the joint. They should be removed, if such removal will promise anything for the joint. In a good many instances, as in arthritis deformans, this is not the case; but when the impediment is solely or mainly due to the bursa, the indication is fairly plain.

I am glad that Dr. Swett, in closing his paper, divided the cases into three classes, only one of which necessitates operative interference, for

we all know that a good many of the other cases do clear up under other treatment. I am also glad of the point that he has made in the symptomatology, namely, that the support of a sling does not help the matter, but makes it worse. The number of cases that I have seen in which removal was indicated has been limited; but, with our attention directed to the subject anew by this investigation, I am sure that we shall find cases that have hitherto gone by default which we can help by the operative procedure recommended by Dr. Swett.

DR. ANSEL G. COOK (Hartford): You have listened to a very able paper. Here is a new bursa that has got to be reckoned with. You are all familiar with the patellar bursa, the bursa over the end of the first metatarsal, and the bursa on the olecranon. This new bursa differs in no way from the others with which you are familiar, except that it is over the shoulder, may be pinched as the arm moves, and is less conspicuous. All that is true of the other bursæ is true of this one. The bursitis in all of them is caused by pressure or infection, and sometimes they have to be excised. This one can be excised in the same way. It is simply a new star that has been added to our flag, and must be taken into consideration with other things.

Dr. Swett and Dr. Codman have made great strides in their investigation. They give the causes of this inflammation as trauma, fixation, and infection. Now fixation has never been proved to cause the inflammation of any bursa; that is, fixation *per se*. Of course, if the arm is fixed in such a position as to cause pressure, that pressure will be trauma. The pressure of the arm held up by a tight sling would be the same as the pressure on the bursa of the foot caused by a tight shoe, or the pressure on the patellar bursa from kneeling, or that on the olecranon bursa caused by a constant leaning on the elbow; but I do not think that Dr. Swett and Dr. Codman would say that fixation was the cause of the inflammation of the bursæ in such cases. I have given prominence to this point in order to show that we need not be afraid to fix any of these joints, if we wish to do so. We will, therefore, drop fixation and passive motion, and say rest and irritation. There are times when an inflamed joint will do better with rest, and other times when irritation is desirable; and that is the problem that always comes up. Perhaps I am not very clear; but what I mean is this: With the knee, for example, after you have rested it and got all the water and inflammation out, the muscles are still relaxed and it is slightly swollen. Then, if moderately used, it will get well more quickly than if the rest is continued indefinitely. Dr. Rau of Hartford says that it takes a good man to tell which is indicated in a particular case. I am afraid that my last sentences have been rather confusing.

DR. PAUL P. SWETT (Hartford): I have little more to say, Mr. President. I should just like to call attention to these diagrams, which were kindly lent to me by Dr. Codman of Boston, and are practically self-explanatory. The first presents the appearance of the bursa and its relation to the acromion process when the arm is hanging by the side. The second shows the arm fully abducted, the bursa sliding under the acromion process. If you compare the two, you will easily see why abduction is such a distinct sign of inflammation of the subdeltoid bursa. The other diagram presents a longitudinal cross-section view, showing the relation of the bursa to the head of the biceps muscle.

The Ideal Nose and Pharynx.

FREDERICK M. WILSON, M.D., BRIDGEPORT, CONN.

I wish to call your attention to some of the changes which have taken place in our ideas and beliefs about the nose and pharynx, and then to some of the qualities which make any given nose and pharynx more or less ideal. The twenty minute limit which came with the invitation of your committee, necessitates brief statements, giving very little time to the balancing of probabilities.

Previous to the decade 1880-1890 a very peculiar division of special work existed. The student of otology in those days was taught to focus his attention on the ear, almost to the exclusion of the nose and pharynx, where seven-tenths of all ear troubles start. The throat men gave most of their time to the larynx, the nose and pharynx being entirely secondary. This neglect has in recent years been remedied, and we have at last come to the proper division of labor. In every clinic, the special student is now taught the four subjects of ear, nose, pharynx and larynx *together*, as mutually related and inter-dependent.

Since 1890, along with the tremendous and increasing attention given to cerebral complications of ear disease, there has also been an increased attention to the nose and pharynx; and every busy medical man, whether in city or country, whether a general practitioner or specialist, is called upon often not only to detect the presence or absence of disease, but also to decide whether the cavities are of normal size and shape.

Is there then any absolute standard to go by? Unfortunately there is not. Descriptive anatomy is exhaustive in a general way. Physiology is exhaustive of lungs and larynx, but very far from it of nose and pharynx. Although the nose and pharynx form such a gateway for the microorganisms of general disease, one cannot learn what is normal and what is

abnormal from either the literature of bacteriology or of general medicine. Otolological literature is exhaustive on the harm which can come *from* the nose and pharynx: and nose and throat literature itself is exhaustive on the grosser variations from normal. But if, in any given case, one seeks an answer to the very natural question, "Is this particular nose and pharynx of exactly appropriate size and shape for this particular pair of lungs?" the answer is, "We have no means of accurate measurement."

It goes without saying that a child with a narrow upper maxillary, nose blocked, upper pharynx full of adenoids, lower pharynx full of tonsils, needs both the dentist and the doctor. But when the obstruction is small we still have to rely on the trained eye and on individual judgment.

One instrument may be mentioned. A glass tube, 3-4 feet long, one end in the mouth and the other in a glass of water on the floor, will by variations in the height of the column of water indicate any rarefaction of air during inspiration. But a difficulty in its practical application is that everybody has to learn to use it. With a tube in the mouth everybody unconsciously adjusts the parts for the act of sucking, until by training they have learned to breathe naturally and not to do it. It is called Bucklin's respirometer.

This increased attention to small variations from normal, especially of the nose, has led to some unexpected conclusions. Complete obstruction, compelling habitual mouth breathing, obtrudes itself upon the attention, and few cases *now* escape operation and relief; but obstructions which do not compel mouth breathing, but only cause incomplete nasal breathing, are much more insidious and usually exist a much longer time before they are relieved; and as they are very much more common than complete obstruction, it is practically certain that on the whole they do more harm.

Just how small an obstruction may seriously interfere with air supply in any given case, we do not know. Quicker breathing will compensate for very minute obstructions. Quicker breathing and an occasional opening of the mouth will compensate for obstructions less minute. But in cases where com-

pensation is not quite complete, the number of inspirations in any given time is so great that the total loss of air is large. E. g., suppose on an average one cubic inch of air is lacking at each inspiration. We breathe say eighteen times a minute, sixty minutes in the hour, twenty-four hours in the day, and so on. The figures run very quickly into millions. Let us carry our illustration a little farther. Suppose this particular patient has an incipient tuberculosis and suppose that he or she is taking the fresh air cure. This limitation of air supply would of course be a factor in the result, and the worst of it is that in a case of this kind, the difficulty in breathing is always referred to the lung trouble, and the small nasal obstruction is liable to be overlooked.

Besides air supply there are a number of other things to be considered.

It is perfectly certain that the symptoms of asthma may be aggravated by small obstructions in the nose and pharynx. It is perfectly certain that in any given case the number of attacks may be increased in the same way. It is also certain that in a respectable number of cases the attacks lessen in number and severity when the obstructions are removed. We can speak still more positively about hay fever; and while the tendency to hay fever and asthma is just as incurable now as it ever was, the local conditions are often the exciting cause and when they are removed so large a measure of relief often follows that we are practically justified in using the word "cure."

We next come to that bane of the otologist—chronic middle ear deafness in all its varieties. It is an accepted fact of pathology that this process starts in the nose and pharynx. It is an accepted fact of therapeutics that the results of treatment directed to the ear itself are very far from what we should like. It is an accepted fact of experience that progressive middle ear deafness is sometimes permanently checked by removing local irritation in the nose and pharynx. Some slight alteration in the contour of the nasal cavity, some slight smoothing of the roof of the pharynx, some slight obliteration

of some small tonsil pocket, so lessens the irritation of the Eustachian tube that the process does not go on.

Obstruction of the nose is much more common as a primary condition than obstruction of the pharynx. All cases of narrow upper maxillary, and a majority of the cases in which the septum is malformed, are congenital, or faults of growth. The influence of blows on the nose has been greatly exaggerated.

There are radical differences between the obstructions of the nose and those of the pharynx. The nasal cavities may be simply narrow throughout their whole extent, due to the narrow upper jaw, so that when the dentist widens the jaw the nostrils open during the process. Uniform narrowing of the pharynx is practically unknown. The most common obstructions of the nose are cartilaginous or bony, and permanent. They never disappear without surgical interference. The most common obstructions of the pharynx are adenoids and large tonsils, which if uninterfered with and the child lives through it, always shrink and may entirely disappear.

It is exceptional to have adenoids and large tonsils without preceding deformity of the nose. It is reasonably certain that nasal deformity in many cases causes the pharyngeal growth. The most probable theory of causation is that the nasal obstruction causes slight rarefaction of air at each inspiration, and congestion and glandular growth naturally follow. The glandular growth increases the obstruction, and the vicious circle is established. The marvelous relief and improvement in breathing which follow the removal of the adenoids sometimes leads us to overlook the moderate nasal obstruction which was the probable cause.

But there are many children with nasal obstruction who do not have adenoids or enlarged tonsils. The most probable explanation of this is the well-known difference in children in their tendency to glandular enlargement. One child with every influenza has enlarged glands: another child with much influenza every winter, never has enlarged glands.

It is not the rule for nasal obstruction alone to cause pharyngeal obstruction, but if a child has a tendency to enlarged

glands and nasal obstruction too, the result is pretty sure to follow.

Deformity of the septum may by direct irritation, and also by causing retention of secretion, cause hypertrophy of one or more of the turbinated bodies, and often on examination this hypertrophy seems to be the principal obstruction. Undoubtedly the quickest and easiest way to let air through that nasal cavity is the removal of some portion of the soft turbinated tissue—and this is often done—but that is not the ideal way to deal with the case. If we can first remedy the deformed septum, the hypertrophy will in a certain number of cases disappear; and even if it does not, it is better to make a linear wound along the turbinated body. This on healing will tack it back so that it will puff up in two small rolls instead of one large one, and its function of warming the inspired air be partially preserved. This of course takes much more time and trouble, but it is certainly more rational and more ideal.

There are a few cases where the adenoid tissue in the roof of the pharynx is not hypertrophied at all, and yet ought to be removed; e. g., cases of recurrent influenza, where the influenza always starts in the roof of the pharynx and where repeated inspection shows that some hole or fold in the tissue is the starting-place.

Large tonsils in these days rarely escape operation, but very small tonsils with holes or folds for microorganisms to lodge in are sometimes overlooked. In many of these cases simple inspection is not enough. A curved blunt probe can often be thrust into openings which are infected and doing harm when no amount of inspection alone would detect them.

The particular form and size of nose and pharynx which are ideal for the singer, actor or public speaker, we do not exactly know, but we *do* know that any lack of breathing space is fatal to the best results, and that no class in the community are so insistent that every unnecessary hole or fold where microorganisms can lodge should be obliterated.

Under the influence of this pressure from the patient I have in a few instances been unwise and made the nasal cavities too

large, producing chronic irritation of the pharyngeal mucous membrane and of course more risk of inhaling the wrong microörganisms.

The list of diseases which can come to us by way of the nose and pharynx is a formidable one.

The influenzas of all sorts.

Infection of the antrum of Highmore, of frontal sinus of ethmoid and sphenoid cells.

Infection of tympanic cavity, mastoid cells and cerebral cavity.

Hay fever and asthma.

Facial erysipelas—quinsy—tuberculous laryngitis.

Diphtheria—scarlet fever—measles—chicken pox—small pox.

Pneumonia—tuberculosis of the lungs—etc., etc.

Every disease on this list is of course possible with ideal nose and pharynx. We cannot obliterate all the folds of the turbinated bones. We cannot obliterate the Eustachian tubes. Between a healthy tonsil and the faucial pillars microörganisms can hide. But the ideal nose is rare. The average nose contains more places for microörganisms to lodge in than are necessary. The average pharyngeal roof is not perfectly smooth. Holes and pockets in tonsils are rather common, and no one who knows the conditions which favor the breeding of microörganisms can doubt for a moment that these additional hiding places for germ life add to our risks of disease. And every worker of large experience in this field can practically prove by numerous records that a considerable number of these diseases are actually prevented by making nose and pharynx as ideal as possible.

Of local applications, be they watery, oily or of powder, I have said nothing because of their minor importance. They give temporary relief, but contribute very little toward making any nose or pharynx permanently ideal. I have not described any of the gross variations from ideal, partly from lack of time and partly because the literature is ample and accessible.

An immense mass of writing has appeared on the mechanical surgery of the nose; another immense mass on the surgery

of the accessory sinuses. A whole library has been written on the cerebral complications of ear disease. The appearance of nose and pharynx in all forms of serious disease has been copiously and carefully described. But up to quite recently there was no literature of minute variations, and even now it is scanty and hard of access. Casual mention here and there, and this for the most part left out of the index, is a perfectly fair description.

In conclusion let us recapitulate and restate:

The amount of air passing through any given nose and pharynx in a year's time must be reckoned in millions of cubic feet. An obstruction having almost no influence in a single inspiration can have great influence in a million inspirations. This is also true of nasal cavities that are too large. All laboratory experiments on city and town air do not indicate a high standard of purity. Laboratory experiment gives expired air a much lower percentage of microorganisms than inspired air. Most of these microorganisms are deposited on the moist mucous membrane of nose and pharynx, and are subsequently blown on to the handkerchief or expectorated. The number of these microorganisms is very large. The nose and pharynx might almost be called the filtration apparatus of the air. These organisms rarely breed and do harm on a plane surface. They must have some hiding place where they can lodge and multiply, and the ideal nose and pharynx should contain as few of these hiding places as possible. No one will dispute general statements like these, but I am very sure that we as a profession are not fully alive to the importance of small unnecessary hiding places and their complete obliteration.

DISCUSSION.

DR. DORLAND SMITH (Bridgeport): Nasal surgery for consumption is at first thought somewhat startling. The more one thinks about it the more reasonable it seems. Practically, I have had no experience with it. I have, however, for some years been making careful search for small defects in the nose and pharynx and obliterating them, and in my own cases and in those of Dr. Wilson which I have seen, the conclusions of this paper have been abundantly demonstrated.

A subject like this, in the borderland of knowledge, where mooted questions are the rule rather than the exception, I suppose requires

theoretical treatment if the paper is to be brief, but this paper is based upon so large a clinical experience that I am sorry that we could not have had more of that side.

We are used to the correction of large defects, such as bad breathing and large tonsils and adenoids, but the idea of making a person who is ordinarily well perfectly well, by paying attention to small things, is a further step in development. We must come to look more closely at the minor symptoms and relieve those people who have occasional attacks of tonsillitis, quinsy or pharyngitis, those in whom every cold is protracted or who have several colds each winter; and some of those who are subject to hay fever and asthma, in whom the nervous element is not too pronounced. The improvement of the voice, too, both for speaking and singing, which follows good nose and throat surgery, is no small matter in a community of Yankees.

I have observed that the acquisition of a *good* nose and pharynx gives one not only practical freedom from colds, catarrh, sore throat and the air-borne diseases generally, but gives one also a higher level of health; also, that this may be given to almost anyone who will take the time and trouble to have those bits of surgery done which make the nose and pharynx approach the ideal.

Gross defects are readily apparent: the minute ones often require careful search, though one finds them principally in certain definite regions. For example: In the nose the septum is most frequently crumpled from above downward, and ledges or spurs of exostosis and hypertrophies of soft tissue are found at the bends near the floor of the nose, usually in contact with the swollen inferior turbinate. The posterior end of the septum is sometimes hooked, partly closing one of the posterior nares. Hypertrophies of the soft tissues about the entrances to the accessory sinuses are not unusual. In the ideal nose the septum is smooth and straight and there are no points of contact with the turbinates.

In the nasopharynx, a small adenoid growth about the orifice of the Eustachian tube may do more harm to the hearing than a large adenoid in the vault or on the posterior wall of an otherwise roomy pharynx. It was well said that *at least* seven-tenths of ear troubles start in the nose and pharynx. Holes and pockets are more difficult to find here, but the presence of secretion is an aid.

In the faucial tonsils a blunt curved probe may be gently but firmly insinuated into any crypts or holes which may be present. Such pockets are frequent behind adhesions to the anterior or posterior pillar (especially if tonsilotomy has been done), and also near the top of the tonsil.

While the mass of the profession practices *partial* removal of tonsils and adenoids because it is easier and safer, and it often gives relief and sometimes cures, the tendency of the specialist is toward *complete* removal: to enucleation of tonsils in their capsules, to resection of the

nasal septum, and to so complete removal of adenoids that perhaps some of the posterior pharyngeal wall or the end of the Eustachian tube is taken, regardless of the harm which the scar tissue does. The specialist has been driven to his position by frequent failure to get perfect cures, and he has assumed that the tonsillar tissue left behind was the cause of failure. In this I think he is wrong. I am satisfied that the certainty of permanent cure and ideal end-results is to be found, not in thoroughness in extirpation of tonsil tissue, but in thoroughness in searching out crypts and pockets and recesses which will admit a probe and in converting them into shallow saucers by trimming their edges; in excising adenoid hypertrophies which interfere with breathing or with the function of the ear; and, last but not least, obtaining free nasal breathing and absence of contact spots in both nostrils by surgery confined so far as possible to the septum.

As to methods, each man has his own. That is a mechanical problem. The method is unimportant so long as a smooth surface without a hole of any sort is finally left after healing is complete.

Whether there is a compensatory hypertrophy of the tonsils and adenoids when nasal breathing is poor, to do the work which should have been done by the turbinates and adenoids, or whether the hypertrophy is mechanical from partial vacuum and congestion, like many another theory is difficult to prove or to disprove. But that moderate hypertrophies as well as large ones make trouble we are all sure. Once the idea is called to one's attention, it takes but little experience to satisfy oneself that in small tonsils it is the pockets and adhesions and not smooth tonsil tissue which makes the trouble. Whether the tonsillar ring acts toward air-borne diseases as a gateway or as a defense is still a mooted question; but until it is settled, I prefer to leave a small tonsil which gives no trouble than no tonsil at all. And my own experience agrees with the very large experience of the writer that it is possible to have a small tonsil which we are certain is doing no harm, and may be doing good.

DR. FREDERICK M. WILSON (Bridgeport): We have definite and positive evidence that these small pockets are of importance in influenza, hay fever, asthma, and other minor diseases. This can be proved by the cases of anyone with large experience. We have not the clinical evidence that they are important in pneumonia, tuberculosis and other general diseases; and this is the point upon which we need evidence. As these are air-borne diseases and come through the nose and pharynx, it can be readily assumed that they are important; and if they are, that is a much more important subject than the other diseases for the gathering of clinical evidence; but we poor specialists do not see these cases, and must depend upon the general practitioner to furnish the clinical evidence that will enable us to be sure upon that particular point.

SURGICAL PAPERS

The Treatment of Infection Following Abortion, Miscarriage and Labor.

CHARLES A. MONAGAN, M.D., WATERBURY, CONN.

The ideal treatment for this condition is preventative—the development of a complete, rigid aseptic technique in the management of labor and the puerperium.

Most observers claim the gravid uterus contains no pathogenic microorganisms and many of them claim also that the normal puerperal uterus does not. Therefore, when we have a septic condition present, the infecting material must have been introduced from without—usually either by the hands or instruments of the attendants.

In 1846, when Semmelweiss, a young doctor connected with the Vienna Hospital, observed the striking difference of ten to one in the death rate of two maternity wards in the same hospital, he began to look about for the cause. One ward was conducted by medical students; the other by midwives. He found that medical students often came directly from their work in the dissecting-rooms to the delivery-room. He issued an order that no student should examine a case without first washing his hands in chlorine water, with a result that the mortality fell from 11.4 to 1.27 in a year.

When rubber gloves were introduced and began to be generally adopted, I hoped the solution of the septic infection problem had been found. Their universal use would go far toward bringing an end to sepsis, but, unfortunately, their general use cannot be enforced and those who need them most will not adopt them.

Much may be done by our medical schools in the way of enlarging the practical side of the maternity work. Many of the younger doctors can pass a perfectly satisfactory examination on the theory of asepsis as applied to maternity work, but

when it comes to the practical carrying out of this knowledge, they are unable to do it.

Every maternity case should receive the same painstaking care in its preparation and management as abdominal section; and, until this is done, we will continue to meet this discouraging and often hopeless condition, and many times when we are fairly certain it is due to the negligence of the attending physician.

When the condition is actually present, the first signs are an increase in the pulse rate and a change in the character of the lochial discharge. This is the best and often the only chance we have to arrest the spread of infection before the system is loaded down with the products of sepsis.

I have come to the conclusion that every case seen early should be curetted with a blunt curette. The operation can do very little harm and certainly seems, sometimes, to work almost miraculously.

The uterus should be emptied under general anæsthesia; washed out with salt solution. If sutures are present in the perenium, they should be removed. Any suppurating areas should be curetted and thoroughly disinfected.

Now, if at any time intrauterine douches may be of service, three or four douches daily for two or three days may be used. It probably does not make any difference which particular antiseptic is used in the douche. After two or three days it is hard to see what useful purpose their use accomplishes, because by this time the poisons are circulating in the system and local treatment cannot reach them.

The employment of antistreptococcic serum has been extensive in recent years, especially in our hospitals. Its results have been rather disappointing, although the remedy is still on trial, and more may come of it.

The prognosis in this grave condition changes very rapidly. Sometimes undue credit is given the remedy last used for the improvement and then we expect too much from it. This is the case, I think, with the employment of antistreptococcic serum.

The autogenous vaccine treatment of puerperal sepsis was expected to furnish us with an accurate scientific remedy to combat the poison from any particular culture of micro-organisms.

Theoretically the treatment should be successful in every case, but so far the results have not been good, especially in the acute type. In the more chronic type, they may be of greater service, either because the virulence of the infection may not be so great, or because there is more time for the development and employment of the remedy.

The production of a hyperleucocytosis by the employment of nuclein was a method formerly very much used; it failed to arrest the spread of the infection and is not generally used to-day.

The application of the unguentum crede has been advised. I have not seen any good results follow its use; neither have I seen it do any harm. It might be of service in those desperate cases where we must avail ourselves of every means of overcoming the septic poisoning.

The use of ergot is strongly recommended, at least for the first two or three days. It does good by contracting the uterus, thus preventing further infection and expelling blood clots and broken down material from the uterus.

The medical treatment is the ordinary supporting treatment employed in fighting any toxic condition.

Strychnine, from 1-60 to 1-30 of a grain, every six to three hours, depending upon the condition present. Alcohol and digitalis may be employed, especially when the pulse rate is high. The bowels should be opened with calomel and epsom salts. Diarrhœa should not be checked unless it becomes excessive, because this is Nature's method of elimination.

In general, all drugs irritating to the stomach should be avoided, because vomiting is one of the worst conditions to be met with.

The patient's strength can be maintained only by a liberal supply of nutritious food and it is very necessary that the stomach be kept in a condition to properly care for this food.

Milk (peptonized or predigested), peptonoids, eggs, broths, beef juice, etc., should be given as often and in such quantities as the patient can tolerate.

Salt solution, in large quantities, I consider the greatest single means we have with which to combat the inroads of sepsis. The best method for its employment is the drop method (popularized by Murphy), kept up continuously for several days—where one and one-half pints are placed in the reservoir every two hours; this takes from forty to sixty minutes to run out, so that eighteen pints will be absorbed in twenty-four hours. The tube is kept in the rectum the entire twenty-four hours, but the salt solution is running only one-half that time. Sometimes it is impossible to make the patient retain the solution in the rectum. In these cases subcutaneous or venous infusion may be tried. They are of value only in a crisis, because they cannot be repeated often and only a small amount can be used at one time.

The temperature should be controlled by the wet pack—cold sponging—cold bath and abdominal coil. Drugs should not be used.

Pryor advocates opening into Douglass pouch and packing with iodoform gauze. Hysterectomy has been advised in those cases which fail to improve after curettage. It would be of some service in cases where the condition was caused by a suppurating uterine tumor.

In septic peritonitis: multiple incisions—thorough drainage by posture and otherwise—constant use of the rectal saline infusion offer the best means at our disposal.

Trendelenberg has recommended the ligation and excision of the pelvic veins to prevent the spread of the disease. The operation itself is so serious and so many cases can get well without it that it would seem better to wait.

Whenever a collection of pus can be located, it should be immediately opened and drained.

Thanks to the teaching of Semmelweiss, and those who succeeded him, we see these cases much less frequently, but of those infected about the same proportion die. We should not

praise too much the treatment followed in the cases which get well, nor condemn too much the treatment followed in those which do not.

DISCUSSION.

DR. SAMUEL M. GARLICK (Bridgeport): Dr. Monagan has presented the subject of puerperal sepsis in manner not only enlightening but also in a way that appeals to the general practitioner. It is well that it is so, for, after all is said and done, it is the general practitioner of medicine upon whose knowledge, skill, and art the community must depend for the preservation of health and upon whom the sick must rely for restoration to health.

No more important or sacred duty can fall upon any one of us than is that of the obstetrician, upon whose wit and wisdom must depend the health, even the safety of the mother, the life and well-being of the child, the permanent and enduring life of the community. Permit me to ask if it is well that we as physicians, and Connecticut as a state, are committing so much of all this care to half-educated and mostly foreign midwives?

Dr. Monagan strikes the keynote in his first sentence, "The ideal treatment . . . is preventative." To whom are we delegating that prevention?

In giving all due credit to the young German, Semmelweiss, we must not forget a young American whom we all delight to honor, a man of careful observation, accurate interpretation of facts and the logical deductions therefrom, my honored instructor in anatomy, Dr. Oliver Wendell Holmes.

As early as 1843 Dr. Holmes strenuously maintained the contagiousness of puerperal fever and was laughed to scorn by the Philadelphian authorities of that day. At that time Philadelphia was perhaps the center (in America) of the greatest influence in medical opinion and medical education. Just then Samuel Gross was coming forward from his comparative seclusion in eastern Pennsylvania, and his star was rising to be the brightest in the galaxy of early American surgeons.

Neither Von Ziemssen or his American editor, Albert H. Buch of New York, as late as 1878, refer to Dr. Holmes's work: both tentatively admit the probable truth of the infection theory, but are "opposed to the teaching" of Semmelweiss in its too strict limitation.

Concerning the gloved hand I would say that since the pathogenic microbes are found mostly without the introitus vagina, it is not so much a question of gloving the obstetrician's hand as it is of general cleanliness. And, indeed, while I would not abate an iota of the need-

ful care in all cases of labor, I am far from convinced that every maternity case should have the same preparation and management as does an abdominal section. It has often appeared to me that the modern woman with an highly apprehensive organism, and brought up in the habits of our greatly complex and strenuous life, is often brought to the verge of, if not actually into a state of, nervous breakdown by the anticipation, worry, and fear engendered by such elaborate, detailed and expensive preparation. I am sure that equal care, more simplicity with less apprehension, conduces to a more healthful condition, less complicated labors and a more natural puerperium.

In case of induced or accidental abortion I have found the curette, both blunt and sharp, very useful if wisely used. But even here it should not be used indiscriminately, nor without due aseptic precaution and with antiseptic surroundings. So often has my hospital service shown me the bad effects of indiscriminate or routine curettage that sometimes I am led to cry out, as did Dr. Emmett about his vaginal douche, "I almost wish it had never been introduced." In cases of sepsis after premature delivery or labor at term, I have found it an even more dangerous procedure. It should be resorted to almost solely in cases of sapræmic origin.

Antistreptococcic serum has been only disappointing in my hands, or under my observation. With autogenous vaccine treatment I have had no experience. Two cases of hysterectomy for septic metritis have proved fatal, as they would have done anyway, because of the already extended parametric and pelvic infection. With unguentum crede I have had no experience.

A healthful and hopeful attitude on the part of the patient, cleanliness and care on the part of the attendants, intravaginal manipulations limited to that which is necessary and useful, ergot at close of third stage, continued later if necessary, the hot cleansing douche, vaginal or intrauterine or both on the first symptoms of infection, then swabbing the endometrium with iodized phenol, open bowels, enteroclysis (*à la* Murphy), ichthyol and cold externally, in conjunction with a tonic and supporting and symptomatic stomachic treatment, have served me personally very well and few indeed have been my cases that have come to the gynæcologist.

I thank Dr. Monagan for his excellent and practical paper, as indeed I thank sincerely any one of our number who takes the time, and is at the labor and effort to prepare and present such a paper.

DR. THOMAS G. SLOAN (South Manchester): I recently saw in consultation the case of a woman who had been delivered by a very careful man, using all antiseptic precautions. He wore rubber gloves, and saw that no nurses came in contact with the patient in a way to infect her;

yet in eighteen hours she had a chill, and her temperature then went up to 104° . She died at the end of ten days, of puerperal septicæmia. It did not seem that she could have been infected by the man who delivered her. A nurse, who was put on the case several days after delivery, got an infection. Where the infection came from it was impossible to say, except from the vagina. I do not think that any douches were used previous to the confinement. A sister of the woman, and also her mother, had both died in the same way, of puerperal septicæmia.

DR. ALLEN H. WILLIAMS (Hartford): Dr. Garlick's discussion, admirable in other respects, I disagree with in one point—the worry and danger of scaring the patient by taking antiseptic precautions. Any man who remembers the frightful cases of puerperal septicæmia seen in hospitals, though they do not often occur in private practice, will agree with me that there is no precaution that should not be taken to prevent them. If the patient realizes that she is going to go through an illness, and that perfect cleanliness will insure her recovery, she will be very glad to have clean sheets, clean drawers, and sterile stockings. She will not be scared by these precautions when she knows what they mean. The boiling of the instruments can be done out of the room. Care of that sort will not scare a patient, if it is properly explained to her.

The Surgical Treatment of Gastric and Duodenal Ulcers.

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The occurrence of three cases of perforating ulcer, two of the duodenum and one of the stomach, in the private practice of the writer within a short space of time, suggested the subject for this paper. We shall endeavor to discuss impartially the relative merits of medical and surgical treatment with reference to the cure of the ulcer and the prevention of complications and sequelæ, with some consideration of operative procedures.

Leube has said that one-half or three-fourths of all cases of gastric ulcer will be cured by four or five weeks of medical treatment, but if not cured by that time they will not be cured by medical treatment alone. With this statement we agree, and it is probable that the percentage of cures of gastric ulcer by this means would be far greater if an early diagnosis could be made in all cases and appropriate treatment instituted. Failures are often due to the fact that the medical attendant does not realize the gravity of these conditions and does not sufficiently impress upon the patient the importance and necessity of a rigid discipline as regards dietetic, hygienic and medicinal measures.

In duodenal ulcer, which occurs, as we now know, much more frequently than was formerly supposed, while probably some cases may be relieved by medical treatment when detected early, it is doubtful if many are cured by such means after the ulcer has progressed to the point where it can be recognized by definite symptoms. Statistics in relation to the results of medical treatment of ulcer are in the main unsatisfactory, in that the results of different reporters vary between such wide limits and they are often misleading, as relapses so frequently occur in cases reported as cured.

Mayo Robson, in Keen's Surgery, states that gastric ulcer recurs or relapses in at least two-fifths of the cases which are apparently cured. When we consider that this does not take into account the after results, the complications and sequelæ, we can readily admit that the percentage of cases actually cured is much smaller than is generally supposed. Robson estimates that in hospital patients between one-half and two-thirds of the serious cases relapse and that the percentage of real cures is under 25 per cent. He adds that we may on ample evidence accept the fact that at least 50 per cent. of all cases of ulcer of the stomach treated medically ultimately succumb to the disease, or to one or other of its complications.

Deaver, in a recent article (*American Journal of Medical Sciences*, May, 1910), states that the mortality of gastric ulcer treated medically is about 20 per cent., that at least 50 per cent. of so-called cures relapse and that probably not 25 per cent. of patients treated medically are really cured.

Turning now to the results of surgical treatment, in Robson's 300 operations of various kinds for ulcer of the stomach and its sequelæ which had failed to yield to medical treatment, a total mortality of all operations in this worst class of ulcer, including hourglass contraction and hemorrhage but excluding perforation, was only 3 per cent., and the cases completely relieved of all symptoms were over 90 per cent., a proportion which he states will be still better as experience increases.

Moynihan (*Proc. Roy. Soc. Med.*, 1910, III, Surgical Section, 79) reports 197 cases operated upon from 1900 to 1908. There were 11 cases of perforating ulcer, with 3 deaths; the remaining 186 cases were for chronic ulcer of the duodenum or stomach or both; 78 were treated by posterior gastroenterostomy with simple suture and 84 with infolding of the ulcer and posterior gastroenterostomy. The mortality was 2.15 per cent.; 79 per cent. were cured.

In the report of Saint Mary's Hospital, Rochester, Minn., for 1909, we find that there were 43 gastroenterostomies for chronic gastric ulcer and its results, with 42 recoveries and 1 death; 58 gastroenterostomies for chronic duodenal ulcer, with 57 recoveries and 1 death; 4 gastro-gastrostomies for

hourglass, with 4 recoveries; 2 partial gastrectomies, with 2 recoveries; 4 operations for perigastric adhesions, with 4 recoveries; 12 gastric ulcers excised, with 12 recoveries; 21 operations for perforated duodenal ulcer, with 20 recoveries and 1 death; 1 abscess from perforated duodenal ulcer, with recovery; 5 duodenal ulcers excised, with 5 recoveries. This makes a total of 150 operations for gastric and duodenal ulcer and their complications with 3 deaths, a mortality of only 2 per cent.

It must not be understood that relapses do not occur after operative treatment. Following gastroenterostomy without removal of the ulcer-bearing area a carcinoma may develop. A few cases of jejunal and gastrojejunal ulcer have been reported and it is possible for the ulcer to recur. It is difficult to arrive at a correct estimate of surgical failures, but probably the statement made by Deaver, in the article already referred to, that the proportion of cases of relapses after cures following gastroenterostomy is about 10 per cent., is not far out of the way. We must remember, when comparing the results of medical and surgical treatment, that the latter is resorted to for the worst forms of ulcer and for the complications and sequelæ, all of which have failed to be relieved by medical treatment.

We can safely say then that surgical treatment shows a lower mortality and a higher percentage of permanent cures than can be produced by medical treatment alone.

Let us now consider some of the more important complications and sequelæ, none of which as a rule, except possibly hemorrhage, occurs early in the course of the disease. It is a question whether a perfectly healed nonindurated scar following ulcer ever gives rise to further trouble. In the cases which relapse and recur it is probable that at no time has there been an absolute healing of the ulcer, the absence of symptoms during the intermission being due to conditions which lessen irritation, leaving, as suggested by Deaver, instead of an inflamed ulcer an uninflamed erosion. As this process goes on over and over again from an active to a quiescent

stage, it is impossible that secondary changes in the stomach or surrounding tissues should not occur. These depend largely on the position and activity of the ulcer. Adhesions may form between the stomach and adjacent organs; perforation may occur at the site of these adhesions, causing localized abscess, or into the peritoneal cavity. In the healing process the resulting scar tissue contracts and this, with the existence of adhesions and of involvement of surrounding tissues, causes deformities which, if the process is located in the duodenum or at or near the pylorus, cause stenosis; if in the stomach, hourglass contraction.

One of the most important sequelæ of ulcer is cancer. In an analysis of 30,000 cases, Welch found the stomach involved in 21.4 per cent., thus standing second only in point of frequency to cancer of the uterus. It is pretty well proven that in 60 to 70 per cent. of gastric carcinomas the process is engrafted upon an old chronic ulcer. Is it not logical to conclude that had the ulcer been cured at an early stage these complications would not have developed?

The stomach is subjected to many disturbances of circulation, to injuries mechanical and chemical, any one of which may cause a solution of continuity in the mucous membrane. It has been proven that the healthy stomach has the same tendency to recover from such traumatism as other organs under normal conditions. In the cases which do not recover, but go on with intermissions and relapses with ever-increasing frequency, some extra factor is at work. Much remains to be worked out in this direction, but the researches of Pater-son, in connection with his investigation of jejunal ulcer, and of other investigators, point rather conclusively to hyper-secretion and hyperchlorhydria as the most important factors in preventing the normal process of repair. Appropriate medical treatment will naturally relieve this condition for a time, but the same individual perversions of secretion persist and it is perfectly apparent that in many cases such treatment is powerless to cure the condition and avert complications and sequelæ.

After a posterior gastroenterostomy with a short loop there is some regurgitation of biliary and pancreatic secretions into the stomach which neutralizes to some extent the excess of hydrochloric acid, thereby reproducing normal conditions and removing the most important obstacle to the process of repair, and it is now generally conceded that the beneficial results following gastroenterostomy are due to this factor rather than to a better drainage of the stomach, as was formerly supposed.

It is not within the scope of this paper to consider the symptoms and diagnosis of ulcer except in so far as is necessary to determine when surgical intervention is advisable or necessary. It is quite true that the ulcer may exist for some time with no apparent symptoms and that perforation, especially of a duodenal ulcer, may occur without attention having been called to a lesion of this character, as in a recent case of the writer in which a man fifty-five years old, who had never complained of anything except a very slight occasional attack of indigestion, while attempting to pick up an object from under the table was seized with a cramplike pain in the epigastrium. Upon sitting up there was immediate relief, but upon a second attempt to reach the object the pain became very intense and when seen by me eight hours later it was quite apparent that there had been a perforation of some viscus in the upper abdomen. Operation was at first refused but later allowed, and at about eleven hours after the onset an incision through the right rectus revealed a small, circular, punched out appearing perforation at the commencement of the duodenum. This was closed by simple suture, the abdomen thoroughly washed out with salt solution, one small drain carried down to the site of perforation, another introduced suprapubically and one through the right side. Recovery was uneventful and when seen by me twelve weeks after operation he seemed to be in perfect health. Such symptoms from whatever cause certainly demand immediate surgical intervention.

As a good working basis for the surgeon I know of no better grouping of symptoms than that given by Graham in an article in the *Journal of the American Medical Association*, August

22, 1908, page 651. "First, the periodicity of attacks. Second, the number of years through which these attacks and intermissions or remissions have run before surgical relief has been advised, or perhaps accepted." In a series of 258 cases of duodenal ulcer the average duration of symptoms was about twelve and one-half years; while a history of repeated attacks with intermissions or remissions was clear-cut in 90 per cent. "Third, the characteristics of pain, its great diagnostic significance and its place in differential diagnosis." Pain comes on from two to five hours after eating. Food eases the pain until late in the disease, when complications have arisen. Pain is epigastric and nonradiating and is relieved by food, drink, alkalies, vomiting and irrigation. The lower the ulcer the more to the right is the pain. The longer the food gives comfort the lower down is the ulcer. "Fourth, the ready control of all symptoms during the period of attack by the measures that control pain—as food, alkalies, irrigation and vomiting."

Cases presenting this syndrome of symptoms demand immediate surgical intervention and yet many so-called stomach specialists, men of unquestioned ability, still look upon the surgeon as one to be called in as a last resort, thereby consigning their patients to lives of invalidism and to the danger of a fatal termination or to the development of complications requiring more serious operative interference later. In a recent consultation upon a case where the stomach was unquestionably involved, a very noted physician objected to an operation, saying that he preferred to die a natural death rather than to die by art. The best results can only be attained by a close association of surgeon and internist, each striving to supplement the work of the other and to place the patient in the best possible condition to live out his expectation of life in health and comfort.

As regards operative procedure the surgeon, after opening the abdomen and carefully examining the stomach, must decide in accordance with his best judgment the further course of operation. If the ulcer is located in the duodenum, gastroenterostomy is the operation of choice. The Mayos have seen

primary cancer of the duodenum in but five cases, and in only one of these did it appear that the cancer might have had its origin in previous ulcer of the duodenum (*Journal of the American Medical Association*, May 14, 1910, page 1609). Considering the large number of duodenal ulcers operated upon by them, the possibility of a later cancerous degeneration is so slight that excision of a duodenal ulcer is rarely necessary. In an histological examination of 218 specimens of cancer of the stomach removed by the Mayos, Wilson and MacCarthy were able to show that 71 per cent. of cancers had their origin in chronic gastric ulcer. For this reason, in gastric ulcer the removal of the ulcer would seem to be the only proper procedure in many cases.

Dr. William H. Mayo, in the article just referred to, says: "We have practised this for several years wherever it seemed possible and in a number of instances found cancer on ulcer in the early stage." In 266 resections up to January 27, 1910, there were 34 deaths, or 12.4 per cent. During the year 1909 there were 46 resections, with 4 deaths, or 8.6 per cent.

In the majority of cases of gastric ulcer, however, a posterior gastroenterostomy is sufficient, and in point of fact the best results following this operation are obtained when done for pyloric stenosis due to an healed ulcer. In some cases a Finney gastroduodenostomy may be a better operation. When upon an exploration nothing pathological is found in the stomach or duodenum, the surgeon must look for the trouble in other organs. Mayo has called attention to the fact that the control of the pylorus is vested in the parts to be inconvenienced lower down, lying between it and the splenic flexure of the colon, all derivatives of the midgut, so that disease in the gall bladder, appendix, tumors, and diseases of the intestines may cause closure of the pylorus and give rise to symptoms which may seem to indicate disease of the stomach itself. Cases of pyloro-spasm due to concretions, adhesions, or disease of the appendix, are familiar to every surgeon of experience. Whether a gastroenterostomy should be done in the presence of an ulcer which is so situated as to cause no

stenosis of the pylorus, either actual or potential, is a mooted point. Such ulcer should be excised when possible.

From the fact that the reduction of the amount of hydrochloric acid to the normal is the greatest desideratum in the treatment of this condition, and that there may be more than one ulcer in existence at the time of operation, it follows that when the ulcer cannot be excised or there is a suspicion of the existence of more than one ulcer, a gastroenterostomy is indicated. It has been proven that after gastroenterostomy, especially when the opening is small, food will continue to pass out of an unobstructed pylorus and that a small anastomotic opening may close within a few weeks. Such closure may be due to faulty technique, or to chronic ulceration at the anastomotic junction from the action of the hyperacid gastric secretion upon the jejunal mucous membrane unaccustomed to such irritation and subsequent contraction and union of opposing surfaces. To maintain a proper gastric acidity and prevent closure of the opening where the pylorus is patent, the gastro-jejunal opening should be made sufficiently large to insure a regurgitation of alkaline secretions which will allow the ulcer to heal and prevent closure.

Operation is rarely indicated for the control of hemorrhage itself. In fact it is sometimes difficult to find the bleeding point. Where hemorrhage recurs gastroenterostomy is usually sufficient to effect a cure. One of the most serious complications of ulcer is perforation, which occurs in from 6 to 20 per cent. of cases and is more frequent when the ulcer is situated on the anterior wall. If adhesions have formed, uniting the involved area to adjacent organs, there will simply be localized abscess. If no adhesions exist there will be a sudden onset, with the usual symptoms of a perforating peritonitis. Previous history may assist greatly in the diagnosis. Such symptoms call for immediate exploration, when there should be little difficulty in locating the seat of the trouble. The results of operation performed in the first few hours after perforation are exceedingly good. The ulcer should be closed by simple suture or infolding and in the majority of cases, if

the patient's conditions will allow, a gastroenterostomy should be done. If operation is performed early and there is little extravasation of stomach contents, it may not be necessary to wash out the abdomen, simple wiping of the soiled area being sufficient. After a few hours, however, especially if there is any amount of food in the stomach, the pelvis and greater part of the abdomen will contain a large amount of food particles and thorough flushing of the abdomen is necessary, with drainage to the site of perforation through a suprapubic opening and possibly through the right side. This was the procedure which was followed in the three cases recently operated upon by the writer.

In one there was a history of a chronic ulcer of the duodenum, with alarming hemorrhage several weeks before. This was followed by marked improvement and the patient had been engaged in his usual occupation for about a week previous to the perforation. He was first seen by the writer about an hour after the perforation occurred, and was removed to the hospital and operated upon within four or five hours. The ulcer was in the first portion of the duodenum; was closed by simple suture, and although on account of the thickening and evident narrowing of the lumen a gastroenterostomy would have been advisable, it was not attempted on account of the condition of the patient. With the exception of a post-operative pneumonia recovery was uneventful and he is now in excellent condition, except that he has to be a little careful about his diet.

The second case had given a history of pain for about eight months, with vomiting and later hematemesis and occasionally tarry stools. When seen by me he was rallying from an extensive hemorrhage, as evidenced by collapse and very profuse tarry stools, with some blood in the vomitus. He was at the time far from a good operative risk and it was decided to defer operation in the hope that his general condition might be improved. A few weeks later I was called in the night by the attending physician and found him in collapse, with rigid abdomen and every indication of a perforation. At operation

within three hours of the time of perforation the abdomen was filled with gruel which he had taken a short time before. The perforation was in the anterior wall of the stomach, in the center of a large indurated mass involving a large portion of the lower end of the stomach and seemed to be in the center of a linear ulcer. Perforation was closed and fortified with an omental graft; the abdomen washed out and drained as in the previous case. He did very well after operation considering his condition, but the pylorus being evidently occluded, an anterior gastroenterostomy with Murphy button was done about twenty-five days later by another surgeon. The immediate cause of death fifty-four days later was an obstruction at the site of the enteroenterostomy, due to a malignant degeneration of the omentum which was sutured around it. The mass felt at the time of operation was unquestionably malignant. At autopsy the ulcer was found to have entirely healed.

The third case was referred to early in this paper.

Of late attention has been called to gastrojejunal and jejunal ulcer following gastroenterostomy, especially by the papers of Paterson (*Annals of Surgery*, August, 1909), and William H. Mayo (*Surgery, Gynecology, and Obstetrics*, March, 1910). Paterson found 3 cases in 348 patients whose after history had been traced. Out of 1,141 gastrojejunostomies performed by the Mayos only 3 cases of gastrojejunal ulcer developed. In 160 gastrojejunostomies, Schostak reports 1; Wickenhauser 3 in 115; Rotgans 1 in 49.

The causes of gastrojejunal and jejunal ulcers are faulty technique and a persistence of hyperacidity. To prevent the occurrence of this condition there should always be a large anastomotic opening, as there is always some contraction later. There should always be accurate apposition of the mucous membranes of the stomach and jejunum to reduce the amount of scar tissue to a minimum. All bleeding should be controlled. one of the cases reported by Mayo having been due to a small hematoma formed by the accidental pricking of a vein in the transverse mesocolon at the time of operation—and the sutures should be so applied that no necrosis of tissue results.

Suture operations are preferable to those made with mechanical appliances, and nonabsorbable material should not be used for the inner row. Long-loop operations with an enteroenterostomy and "Y" type of operation should be avoided if possible. The persistence of hyperacidity after gastroenterostomy leads us to the consideration of one of the most important problems in connection with these operations, that is, the after treatment. This has certainly not received the attention it deserves. Many cases have before operation an amount of hydrochloric acid much in excess of that which can be sufficiently neutralized by the usual amount of regurgitant intestinal juice. Although the percentage of hydrochloric acid may be normal, there may be an hypersecretion which increases the total amount to such an extent as to interfere with healing of the ulcer and to be an exciting cause of gastrojejunal ulcer. There may be a deficient amount of bile and pancreatic juice, causing deficient neutralization of hyperacid gastric juice.

The gastroenterostomy is but one step toward a cure and patients should be as carefully watched as before operation and subjected to proper medical treatment when necessary, until sufficient time has elapsed to enable the attendant to be certain that a permanent cure has been effected.

Operations for gastrojejunal ulcer are in the main unsatisfactory and medical treatment should be persisted in until it is certain that a cure can not be effected by that means.

DISCUSSION.

DR. OLIVER C. SMITH (Hartford): Dr. McKnight's paper was concise and comprehensive and brings the subject of gastric and duodenal ulcer up to date. He devoted most attention to *chronic* gastric ulcer, indeed, that might well have been the title of his paper.

Gastric and duodenal ulcer becomes a surgical disease after a reasonable length of time and medical treatment. Text-books vary as to the length of this time, some say six weeks, others six months, but such exact lines can not be laid down. After a reasonable length of time, which will depend upon the condition of the individual case and

the treatment received, it may properly be determined whether the case should be treated medically or surgically.

Two thousand cases have been reported from the clinics of Moynihan, Mayo-Robson, and the Mayos. Most of these cases have been thoroughly studied before, at the time of, and after operation. Statistics obtained in this manner are far more valuable than those coming from the autopsy table, where terminal conditions are found, and not the conditions which went on primarily during life.

The fact has been referred to, that pathologic conditions lower down in the intestinal canal develop symptoms similar to those of gastric and duodenal ulcer, such as appendicitis, gall stones, tumors of the small intestine, etc. This fact adds to the difficulty of diagnosis.

The fact that carcinoma frequently develops on the base of a gastric ulcer emphasizes the importance of early operation. Sixty-eight per cent. of malignant tumors removed show evidence of old ulcer or ulcer developing, the two conditions being intermingled. It is oftentimes impossible to determine before operation, and even at operation, until the specimen is examined microscopically, what pathology we are dealing with. This fact points to the importance of more frequent resections of the portion of the stomach bearing the ulcer, and I believe that in the future we shall excise ulcers more frequently than we have in the past. Two years ago we discussed this subject in New Haven. We were then coming to realize that posterior gastrojejunostomy was the operation of choice where anastomosis was to be made. With improved technique the operation is becoming quite safe. In a series of thirty cases we have had but two fatalities, both of these occurring early in our work, one from hemorrhage into the stomach, probably from the ulcer, occurring a week after operation; the other occurred in an alcoholic in whom we found disease of the head of the pancreas at the time of operation.

It has been pointed out that the through and through linen sutures may lead to jejunal ulcer. The through and through sutures should be of absorbable material, preferably No. 0 tannated iodine catgut.

A number of our patients with chronic gastric and duodenal ulcer have presented a typical symptom complex, the attacks of stomach distress coming in spells and lasting for a few or a number of days or weeks, the spells consisting of gnawing, burning pain, accompanied by belching of gas, eructations of sour fluid, and, in some instances, vomiting of acid water and mucus. These symptoms reaching their height at from two to four hours after meals are generally relieved by food, alkalis in solution, vomiting or lavage. A low diet or starvation treatment relieves the symptoms, only to return, in most instances, after a varying length of time, when the patient has resumed ordinary

diet. With early operation properly and carefully performed from 80 to 90 per cent. of these cases can be cured.

DR. EDWARD W. SMITH (Meriden): The very valuable paper of Dr. McKnight and the full discussion of Dr. Oliver C. Smith leave very little for me to say from the literary standpoint, but it is very unusual to find present in one patient the demonstration of a healed ulcer and also the production of symptoms of pyloric stenosis due to conditions lower down in the intestines. By courtesy of Dr. Oliver C. Smith I will report a case that showed these points. The patient was a grinder, twenty-six years of age, who consulted me on October 20, complaining of stomach trouble. He gave a history of having had symptoms for a year and a half. He had left work on the 12th of October. These were the bedside notes that I took at that time, and the history was something as follows: From breakfast until nine o'clock in the morning he felt very sick. From that time on he felt well until after dinner. At about two o'clock he would have sharp radiating pains in the stomach. These continued until about four o'clock, and then he would feel sick and nauseated until bedtime, and have belching of gas and other symptoms. From these symptoms and the excessive sensitiveness in the region of the stomach, at the left of the median line, I made a diagnosis of ulcer of the stomach. He consulted his old physician, Dr. Kellogg, and remained under his care from October 5 to November 10, when he was taken with fainting spells. I was called to see him that evening, and he showed symptoms of hemorrhage. The sensitiveness over the stomach was still excessive, and the next day the evidence of hemorrhage was found in the dark, tarry stools. I put him to bed under medical treatment, a rigid diet, and rest for four weeks. In a week's time he improved. His appetite came back, and at the end of six weeks he was getting a pretty good diet. He went back to work and remained well for a month. Then he complained of a return of his stomach symptoms. I examined him and found no tenderness over the stomach, and I was hesitating as to the diagnosis and waiting to see what would develop. Then he drifted to the Hartford Hospital and came under the care of Dr. Oliver C. Smith and the staff doctors. A week later I was invited up to Hartford to see a gastroenterostomy done. The symptoms were those of obstruction. Previously there had been no obstructive symptoms—no vomiting. I saw the operation performed. Dr. Smith opened the abdomen and found the stomach in good shape; but there was a place where an ulcer had apparently been healed, leaving the pylorus open. Dr. O. C. Smith went on down to the appendix and found a kinked-up very long appendix. This was removed and the man made a good recovery. I saw him a few days ago and he was feeling fine. He

had had a peptic ulcer healed by medical treatment. He then had pylorospasm caused by an irritated appendix. When you have a gastric ulcer, the appendix had better be looked out for also.

DR. WILLIAM H. CARMALT (New Haven): There is a point I should like to speak of which Dr. McKnight has not made so much of as might be, i.e., the symptomatology of supposedly cured cases. Dr. William J. Mayo has repeatedly said that the cases of gastric and duodenal ulcer operated on by himself and his brother have been *cured*, on the average, six times. This is up to the medical men to think about—that the condition of relief which the patients obtain from a course of medical treatment is not a cure, but simply a temporary improvement. When a patient has had several such experiences it is time for his medical advisor to “sit up and think” and allow himself to be guided by the judgment of men looking for *end results*, not being satisfied with simply temporary relief.

DR. WILLIAM F. VERDI (New Haven): I should like to call attention to the fact that there is a difference between a chronic ulcer and a perforated ulcer. The symptoms are different. In the first place, perforating ulcers come on, as a rule, in young persons, between twenty-eight and thirty. The symptoms are usually not severe. The patients complain of a little sour stomach, and have to cut out one or two articles of diet; but they are able to continue with their work. They are usually seized with perforation while at work, and are brought into the hospital with intense pain, requiring immediate relief. There were two such cases brought into the New Haven Hospital within three or four weeks, about four weeks ago. In both cases the diagnosis of perforation was made before the operation, which in one case was performed twelve hours after the accident had taken place. The other patient had gone as long as seventeen hours after the perforation before the operation was performed. Both these patients had had no symptoms to speak of before, except a little sour stomach. No adhesion was found around the ulcer. The ulcers had very small openings, but had poured out a good deal of stomach contents. The openings were near the pylorus. Both patients recovered. The ulcers were closed, and a posterior gastroenterostomy was done in both cases.

The left half of the abdomen usually does not become involved until later. At first it is the right half only that is affected. The intestinal contents are poured out under the surface of the liver, and go toward the right iliac fossa. I put a drain over the region of the appendix and no infection followed.

The chronic ulcer is different. The patients have a long train of symptoms, going on over a number of years; and in these cases there

is not much danger of perforation, because a great many adhesions are formed around the ulcers, which protect them. Another thing is that it occurs in younger individuals.

DR. LOUIS M. GOMPERTZ (New Haven): I want to thank Dr. McKnight for his interesting paper. There are a few points that I wish to emphasize. I believe, first, that it is extremely important for the medical man to constantly bear in mind that ulcers of the stomach and duodenum are much more common than is generally supposed. In order to treat ulcer medically, the very first and most important point is to make an early diagnosis. When patients come complaining of pain on an empty stomach which is relieved by food, and then coming on again within one to four hours after eating, we should be suspicious of the presence of ulcer of the pylorus or duodenum. This is the first step in the successful treatment of ulcer. The very acute ulcers are benefited by medical treatment where an early diagnosis is made, but when a case of ulcer of the stomach continues with remissions and the patient returns complaining of the same symptoms and a marked loss of weight, it is absolute folly to continue medical treatment. You can treat patients with chronic ulcer; making no difference whether you give bismuth or silver nitrate, they still have the ulcer. If you wish them cured, send them to the surgeon for operative treatment.

DR. EVERETT JAMES MCKNIGHT (Hartford): Dr. Oliver C. Smith spoke of resection. It seems to me that we are all coming to feel that for ulcers of the stomach, resection or partial gastrectomy is the operation of choice, considering the large number of cancers that develop.

Regarding Dr. Verdi's distinction between the two classes of ulcers, I am not prepared to speak of that. I feel that when a general practitioner sees a patient with pain coming on a certain length of time after eating and having attacks lasting a few days, with intervals of feeling well, again followed by relapses, he should consider that man's life in great danger. If he is not himself prepared to make the necessary tests, he should refer the patient to someone else; and if the symptoms persist, the case should be referred to the surgeon.

The Treatment of Fractures.

GEORGE W. HAWLEY, M.D., BRIDGEPORT, CONN.

In spite of the fact that the treatment of fractures is one of the oldest branches of surgery, its development has been conspicuously slow. The power to set bones has been assumed by quacks and learned practitioners from ancient times, and, doubtless, many of the methods in use to-day would be recognized by the early masters of medical science. This is remarkable when we consider what extensive change nearly every field of surgical practice has undergone.

On first thought it appears strange that a branch which, it is said, includes one-fifth of the cases applying for surgical treatment, has progressed so slowly; but if we stop to consider for a moment, a very good reason will be found in the fact that bone is specialized connective tissue, and like all tissues of mesoblastic origin, it possesses extraordinary power of self-repair. It is difficult to prevent bone from uniting. It will bridge over considerable area. It will heal under adverse conditions. It will even do so when the bone is continued in use and bearing weight. Fractures unite, with treatment, without treatment, and in spite of treatment. Witness the multitude of unrecognized and untreated fractures—fractures of the fibula, of the radius, of the os calcis, of the neck of the femur in adolescents, of fracture-sprains, even fractures of the tibia and shaft of the femur. Furthermore, although bone usually unites with more or less architectural deformity, it has the tendency to assume the normal functions required of it. This reparative and adaptive power of bone has been a wise provision of Nature. If bone repair was not so active or functional results on the average were not so satisfactory, the treatment of fractures would have excited far more concern than it has.

A study of the treatment of fractures as we find it to-day reveals a confusing state of affairs. Among modern methods we find many that are relics of a past age. In rare instances are fractures treated by those who have made a special study of the subject. Almost anyone is deemed competent to treat fractures and in the hospitals this work is largely turned over to the internes. As a matter of fact, little interest is taken in fractures. Surgery has been occupied with more pressing problems. There is a dislike toward assuming the responsibility of these cases and a dread of a possible damage suit. It is a commentary on medical practice that the surgeon is held more liable for disability following fracture (an accidental injury) than following injury of his own making.

We find the old traditions and ideas concerning the "setting" and "reduction" of fractures still popular. These terms imply accurate replacements, yet the X-ray, if it has done nothing else, has exposed this fallacy. Perfect apposition of fractures is rarely secured even by the most experienced surgeons. Not infrequently, radiographs are obtained which it is a temptation not to suppress or destroy. Introduced in court, some would furnish damaging evidence in support of the claim that the bones were not properly "set."

The laity labors under an erroneous and exaggerated idea of the function and limitations of surgical science in the treatment of fractures, and little has been done to dispel this illusion. The lay mind is not satisfied until the surgeon has "set" the bone, and for anything but a perfect result is he blamed. It is not uncommon to hear the accusation made by people of intelligence that bones were not properly set where a person has regained complete use of the bone, but with some slight cosmetic defect. The profession has been placed on the defensive. Such is the penalty for assuming the power to "set" bones.

We find that the treatment of fractures as commonly practiced is empirical in principle. Fractures conform to the treatment, and not the treatment to the different fractures. These principles are "reduction" and "immobilization." We will see

manipulations made for reduction in fractures where there is no displacement. We will see bones immobilized where there is no motion between the fragments and nothing to immobilize. It is a curious fact that nonunion is not so uncommon in the cases most effectively immobilized, but extremely rare in cases which have had no treatment at all.

It seems rather unfortunate that it should be necessary to inflict injury to innocent structures in the endeavor to unite broken bones. Neighboring joints and muscles are often disabled for longer or shorter periods and this commonly imposes a high tribute on the victims in weeks and months of loss of industry.

It is an interesting sidelight on modern operative surgery that there exists a very general fear of operating upon injured bones. While surgery does not hesitate to attack almost any organ in the body, it balks when asked to go to the assistance of a broken bone. In all torn, cut, divided tissues it promptly approximates them, so that Nature's task of repair is made easier—except in the case of divided bones.

Little experimental work has been done in connection with fractures. We know precious little about the nature of bone repair, about bone atrophy, or the influence of the thyroid, thymus, hypophysis, and other factors which enter into the mechanism controlling growth and nutrition of bone.

As Mr. Robert Jones brought to the attention of the British Medical Association last year, the treatment of fractures remains very unsettled. The profession is divided, and we find wide differences, both in theory and practice. While some surgeons are devising new methods of fixation for the shoulder and elbow, others have discarded all splints in these regions. In certain quarters traction is receiving extensive elaboration. Then we have Lucas-Championnière and his followers, who demonstrated to the profession the value of massage in the repair of fractures. For twenty-five years he has taught that the principle of immobilization of fractures is entirely wrong, that surgical opinion must undergo a complete change before any real progress can be made. He teaches that

all fractures are benefited by motion, that in some cases fixation is disastrous, that shortening is favorable and that reduction is unnecessary except as to alignment. Again we have Arbuthnot Lane, Fritz Koenig, and others who have advocated and developed the operative treatment of fractures. Mr. Lane believes in immediate reduction by operation in nearly all cases. A large and increasing experience covering sixteen years is only confirming him in that belief. He even states that it is only a matter of time before the courts will force the profession to adopt operative treatment. Mr. Lane has brought out principles of operative technique which account in large measure for his success.

No accurate estimate of fracture results is possible, because the fracture victims are mostly recruited from those who risk their bodies in manual labor. They are taken into the hospitals and hobbled out before the functional result can be determined. Clinton Dent, who has made careful observation on a picked body of men (the London Metropolitan Police), where the tests were really rigid, found the percentage of disability high, 30 per cent. in simple fracture of both bones of the leg.

The fact that results have not been worse has encouraged the spirit of letting well enough alone, and the fact that to obtain function does not always require the accurate apposition of bone has been the excuse for much careless surgery.

In conclusion it may be said:

1. That the treatment of fracture does not appear to have kept pace with the advance of modern surgery and does not meet present-day needs.
2. That the enormous number who are crippled every year as the result of fracture offers a challenge to surgical science.
3. That this industrial age will soon ask what is being done to lessen the great industrial loss through fractures.

Many suggestions present themselves which might help in advancing the treatment of fractures. It would seem necessary for the profession to take an inventory, to unburden itself of false traditions, to make careful investigation of the amount of fracture disability.

The profession would do well to take the public into its confidence, correct the exaggerated notions as to what the surgeon can do, and free him from unjust blame.

There is room for common sense in laying down the principles on which treatment should be based. In all fractures the bones tend to unite without any assistance of any kind. The most we can do is to help Nature obtain a useful union. The only way we can do this is by approximating the ruptured tissues, when they require approximation, the same as we do in any other part of the body, on the old principle that the more accurate the apposition of divided tissues the more perfect the repair. In many cases Nature needs little or no assistance.

In some fractures good apposition is present; in some accurate apposition is not necessary for useful union. For these latter rest and protection is sufficient. Others require careful approximation to restore proper function—if not by external means, then by operation.

There is need of better means for the holding of divided bone in apposition.

There is opportunity for improvement in the technique of operations on fractures, based on the fact that bone, like most mesoblastic tissues, withstands trauma and infection poorly. With study there is no reason why we should not repair an injured bone as readily as we would other structures.

There is an inviting field for research into the forces controlling bone repair, that we may more intelligently interfere with the reparative processes going on in injured bones.

There is good reason to believe that the future will see an increased interest in fractures and a creditable advance in the treatment.

DISCUSSION.

DR. PHILIP D. BUNCE (Hartford): The treatment of fractures requires much tact. The surgeon must please the patient and his friends, both the medical ones and those who are not medical. The more experienced he is, the more charitable and the less he says about the work of others. He does his work quietly and makes no preliminary report about a wonderful method he has used in two or three

cases and decides it is the only proper method. Perfection is aimed at, but he knows when he first sees the case that there may be some final disability. In general surgery, if the patient dies he dies in an orthodox manner and that is the end of him. If he has a fracture and he has any final disability or deformity, the surgeon is judged to be the cause and a monument of his skill exists as long as the patient lives. A perfect result excites no comment. Has the bone been set? is the question of the patient and his friends. The surgeon is anxious as to whether the bone remains in place. In general, accurate replacement of bones gives best results regardless of particular kinds of splints. Fractures about joints are hardest to treat. A movable elbow joint is better than a stiff normal-looking one. Severe laceration of the soft parts often makes the application of splints and supports very difficult. Operative treatment should be used early in some cases, but it should always be remembered that bones stand sepsis very badly. Sutures of soft parts should practically never be used in compound fractures. Modern surgical methods should be used in treating fractures as well as in other conditions. In my opinion, any method of fixation in which nails or drills are allowed to remain projecting through the skin is bad. I believe X-ray pictures in general should not be shown to the patient. They create dissatisfaction because many people, including many physicians, do not understand bone repair. They expect to see end-to-end apposition in the broken bones and think the surgeon is at fault if this is not so. I do not think it is best to take the public into our confidence about bone repair, because they cannot understand. Do much and say little.

I show an X-ray of the end result of a case of simple fracture of bones of leg. Clinically he made an absolutely perfect recovery. If he saw the X-ray he would be troubled all his life. Many fractures of the lower extremities are turned out of hospitals and institutions before they are ready to be subjected to weight carrying. Certain fractures need braces to supplement their treatment. Often end results are not seen because patients pass from observation.

DR. WILLIAM H. CARMALT (New Haven): It is an old rule in medicine that the more remedies there are, the less successful is the treatment; and we may say, I think, that the converse is equally true: that where there are very few remedies, we are fairly safe in our treatment of the disease, whatever it may be. I must say, after having heard the paper of Dr. Hawley, that I am surprised at the pessimism of the young man, compared with the optimism that I feel with regard to our success in the treatment of fractures. I know that we are not perfect, as Dr. Bunce's picture shows. The picture is that of an apparently very poor result, but the man, from Dr. Bunce's account,

is going around comfortably, and does not know the difference. This shows that Nature can do a great deal in the way of taking care of such things.

The principles of the care of fractures have not changed. We must simply restore the parts as nearly as we can. If we cannot do it by simple apposition and rest, then we have to resort to some more radical and so-called surgical procedure; and there is no reason to hesitate, in these days of antiseptic surgery, to attack a bone that is not in good position and that you think will have a bad functional result. It is not worth while to cut down on every bone that the X-ray shows is not in perfect apposition; if, from experience, you feel that that limb is going to be useful, let well enough alone. I have learned this, not only in fractures, but in many other things. It is the functional result that we are looking for and not the cosmetic effect. The X-rays have taught us that a great many more things happen in a fracture than we had heretofore suspected. Take the case of a Colles fracture of the wrist; here we find by the X-rays that there are a great many other little pieces of bone broken off than the characteristic fracture of the radius which we cannot see. I do not know that the result of attempting to get all these pieces back again, cutting down, boring in, and fastening together, gives a much better result than a good fair apposition of the main fracture.

I will pay my respects to the splint shown. Dr. Hawley says that the objection to most of the apparatuses for the union of bones is that they require screws or nails, and that he does not put in any screws or nails. I see, however, that his apparatus has a very big screw in the middle of the whole thing. There must be a good deal of traumatism effected by having the clamp put on, one part inside the bone and the other outside. We can do nearly as much by old-fashioned means as with that. There is no reason for hesitation in putting the bone in place and, perhaps, wiring it there.

DR. SAMUEL M. GARLICK (Bridgeport): I want to speak on the point of taking the public into our confidence and exhibiting X-rays. A few days ago, a young man came to my office who was anxious to tell me about the excellent result that had been obtained by a surgeon of repute in the treatment of a fractured femur, and wished that I would let him look at it with the X-ray. This I did, and I wished I had not done so—and he also wished I had not. Functionally, clinically, he is absolutely all right; but he has discovered that he has not a perfect alignment. He felt badly, and wanted to know whether something ought not to be done to improve the position. It is all very well to take the public into our confidence, provided that everything is all right; but after you get down to work a while and stick to it, you discover that

some things are not so right as you would like to have them. Professional confidence is wise and safe, but public confidence must be very carefully scrutinized.

DR. GEORGE W. HAWLEY (Bridgeport): I can only say that my interest has largely been aroused, and perhaps my pessimism, by seeing the large number of cases that come to the Hospital for Ruptured and Crippled for treatment of deformities following fracture. Of course that would be expected. In the majority of cases the patients have not gone back to the hospital where they were treated. We certainly see a large number of cases of deformity following fracture, and it has been impressed upon me that a large proportion of them are unnecessary.

Another point brought to my mind is that in some fractures too much treatment is done. A good many require but little, if any, treatment. I have six cases now under my care in which I have done nothing on the broken bone at all. Four of these are fractures of the tibia in which there was no displacement. I saw no reason to put on a splint. The leg was just protected and massaged, and in each case there was complete union within four weeks. More treatment would have done more harm than good, and I think that in a good many cases little or no treatment besides protection is necessary.

In speaking of this little bone-plate that I have had made, all with whom I talked at a recent meeting of the Academy of Medicine's Orthopedic Section, or who spoke on the subject, had experienced great trouble with the use of screws into the bone itself; that is, clamping a metallic plate by a metallic screw to a living structure. Lane himself laid great emphasis on the use of the right drill and the right screw; otherwise, the screw will not hold. The technique is very difficult, and accounts for many of the faults in the use of plates. While this has a screw, the screw does not enter the bone. There is no screwing into the bone itself.

Some Principles of Intracranial Surgery.

WILLIAM F. VERDI, M.D., NEW HAVEN, CONN.

It is not my intention to enter into a discussion of the symptoms or the indications which point to surgical interference in lesions of the brain, nor to remark on the methods and procedures of other operators. I will limit myself to the enumeration of the technical difficulties which are encountered in this branch of surgery, and will give you a description of the methods which I have employed and which have served the patients and myself to the utmost satisfaction.

It is not surgical technique which has hindered and retarded progress in this field. The vast number of difficulties in cerebral localization are issues which at times are unsurmountable. Precise and early diagnosis, the chief stumbling-block to every physician, is not the only requirement the lack of which is felt. As a rule, it is not difficult to establish a conclusion that there is a lesion producing pressure within the skull. Headache, vomiting, convulsions, and optic neuritis, are symptoms definite enough to arouse suspicion. The seat of the onset of the convulsions and their mode of extension is an important localizing symptom for lesions which involve the motor area. Paralysis is also an excellent localizing sign. It is in lesions where these signs are not obtained that the difficulty arises. Papillitis and choked disc, formerly regarded as positive indications of increased intracranial pressure, I have found in two cases to be misleading. In both cases there was marked atrophy. At the operation there was not only no tumor found, but no increased pressure could be demonstrated. An enormous increase in the thickness of the skull was manifested in both cases. The operation benefited one of these cases, but there was no improvement in the other.

As soon as a diagnosis of increased pressure is arrived at, it is not wise to wait too long before decompressive measures should be instituted. This is done not only for the relief of intense headache and vomiting, but for a far more important reason, which is the preservation of vision. Experience has demonstrated that it is only possible to prevent further destruction of the nerve. The fibers that have atrophied are gone and are never regenerated, so you see there is an immense responsibility shouldered in neglecting these cases and to wait too long for more definite symptoms of localization. There is no question in my mind in stating that the ophthalmologists and the neurologists are invaluable and of great assistance to the surgeon in these cases.

It is a fact that after a decompression operation, tumors do emerge from their silent areas and give symptoms which sometimes lead to a successful operation later.

A vast amount of progress has been made in the treatment of lesions which involve the motor area. The symptoms in these cases are definite and the region is easy of access. It is unfortunate, however, that all lesions do not involve this area. The estimated number of operable tumors of the brain has been reckoned at from 4 to 7 per cent. These statistics have been obtained from post-mortem examinations. If we were to consider the number of operable cases of appendicitis or intestinal carcinoma from the conditions which are found on the autopsy table, none would be considered operable. There are surgeons now who still think that the diagnosis of carcinoma of the stomach cannot be made early enough to offer any good chance of cure by operation. This observation is an erroneous one, for I am in a position to state that the diagnosis can be made early and operation gives a splendid chance of cure. Progress in brain surgery has not only been retarded by the natural reluctance of the patient's family and friends, but also by the skepticism displayed by the physician himself. It is the same story over again of appendicitis—the mortality in the early stages of its development was very high; it is now reduced to a minimum. The reason for this is obvious, for

there are now few physicians who are not aware of the disastrous results due to delay in these cases. An overwhelming majority of cases of brain tumors come to the surgeon so late that he can do no good. Several of those which I have operated upon had been for several days either in a state of coma, or their vision had been destroyed by optic atrophy. At this instant I am reminded of such a case. One afternoon a physician called me in great haste to operate for a brain tumor. The patient, a man of about fifty years, had been troubled with violent headaches and vomiting for several months. There was no history of convulsions. For about two weeks prior to my advent upon the case he had been confined to his bed with excruciating headache, from which no relief was obtained by medication. For three or four days before I saw him he had been in a stupor and he was in this condition upon my arrival. I considered his condition so grave I refused to operate. The man died a few hours after my visit. It would not be difficult to surmise what would have been considered the cause of death if an operation had been performed. I know of two other instances where the patients had been in a comatose condition for a variable period before operation was either advised or accepted. In both of these cases death occurred a few hours before the time set for operation.

I have performed forty-one operations upon the central nervous system. Of these twenty-four were operations upon the cerebrum, seven were operations upon the cerebellum, five were operations for the removal of the Gasserian ganglion, and five were operations upon the spinal cord, necessitating laminectomy.

Of the operations upon the cerebrum, three were for idiopathic epilepsy, with one cured, one improved and one not benefited at all; six were for tumors involving the motor area, with two cured and well, one improved, who lived for two years. In two, tumor was not found and one died soon after the operation—this was an infiltrating glioma which involved the frontal convolutions. Twelve were for depressed fractures and subdural hemorrhage, one of which died; one was

for abscess of the middle fossa of the skull—cured; one was for focal epilepsy due to adhesions from a fracture—cured; one was for subcortical hemorrhage, operated upon late and died twenty-four hours after operation.

Of the cerebellum cases, three were for tumors, of which two are cured, one of these living for over three years without any further symptoms; one was for cerebellar abscess and died of septicæmia three weeks afterward; one was for a solitary tuberculoma and died of infection; two others were for cysts, one cured and the other died about four weeks after the operation of acute gastroenteritis.

The five Gasserian cases were all cured and have been entirely free from pain since the operation.

Of the five spinal cases, one was cured, two were improved, and two are still under treatment.

In this series of forty-one cases there were five deaths. Two were inevitable, for they came under treatment at a very late stage of their disease and had been unconscious for several days before the operation, which in both instances was performed as a *dernier ressort*. In the whole series only one died of infection. Two died from shock. There was not a single case of death from hemorrhage. In forty cases the operation was completed at the first sitting. In only one case, and that was a Gasserian ganglion case, in which the ganglion was situated very deeply, the operation had to be stopped because of injury to the cavernous sinus. The hemorrhage was so profuse the operation was deferred two days, when the ganglion was removed.

One case, a woman of twenty-seven years of age, who was referred to me by Dr. Rand, had suffered with headaches and "numb spells" of five years' duration. The numb spells began in the fingers of the left hand and crept up the arm and affected the face; these spells occurred at intervals of one month at first, becoming more frequent as time advanced. On March 20, 1910, she was delivered of a child and had a perfectly normal confinement. Two weeks following this, she had another one of these numb spells and two weeks later, i.e., four weeks after the date of confinement, she had a severe convulsion with

loss of consciousness, and since then there has been paralysis of the left side of the body. Consciousness was regained after the convulsion, but she had periods of semiconsciousness since. Yesterday, the day before her admission to the hospital, the patient again became unconscious and has been so since. The paralysis of the left side of the face, arm and leg was still present. Her pulse was very slow and of a very low tension—128 millimeters of mercury. Her breathing was stertorous at times. She was a very unfavorable subject for operation. During the process of lifting the flap over the right motor area and before I had completely cut through the skull, the patient stopped breathing. It was with difficulty, under artificial respiration, that her breathing was restored. The pulse became very weak at the wrist, the blood in the wound became very dark and bleeding stopped almost entirely. At this period of the operation there was a delay in trying to establish respiration, which appeared to be without avail. In spite of these conditions I decided to continue the operation and hurriedly tried to give her relief from the intracranial pressure. The osteoplastic flap was raised, the dura quickly incised and the brain bulged high up into the wound. Almost immediately upon relief of pressure, after the incision of the dura, the patient began to breathe regularly and well. It was a most noteworthy phenomenon. I found a subcortical hemorrhage of very large size. The patient continued to breathe well but her pulse was small, thready, and very rapid. She died twenty-four hours after the operation. I am sure in this case, if she could have been operated upon earlier, the result might have been different. The diagnosis of this case, made by Dr. Mailhouse before the operation, was of tumor with acute hemorrhage.

In this series of cases there are a number of most interesting histories and results which I would like to give you, but from which I must refrain because it would consume much time and the main object of the paper would suffer.

There are a few facts, however, which I would like to impress relative to the dangers and difficulties attending all operations upon the brain and spinal cord, which when

enumerated will prove that operations upon these structures are not any more dangerous than operations elsewhere.

The worst and most troublesome condition one encounters is that of hemorrhage. Both the organs and the structures covering them are abundantly supplied with blood vessels. Naturally one must be familiar with every possible method of control of hemorrhage that is known in surgery. There is no place in the human body where a surgeon is more likely to find himself at his wit's end, facing a rapidly bleeding wound and baffled by every method at his command for the control of hemorrhage. Rough, dashing operating should give way to gentle, deliberate manipulations. Hartley gives hemorrhage first place as a cause of mortality in head operations. Infection is the second chief factor in mortality in these operations. In my whole series I was in only one case obliged to stop on account of hemorrhage, and I am sure that I have encountered many difficult and troublesome cases which might have required two-stage operations had the technique been less careful. The only case of infection was that of a child who was operated upon for a tumor of the cerebellum, which at the operation proved to be a tuberculoma, and which was removed without difficulty, but the operation was performed in a private house and without trained nursing the case afterward became infected. This case, I am sure, under different surroundings would have added one more to the number of cured. There is not a single case in which death could be ascribed to fault in technique.

Another point I would like to emphasize is the matter of making exploratory incisions into the brain and cerebellum. There is not a single thing to be gained by the introduction of needles into the different places of the brain for the exploration of tumors. The vast majority of brain tumors have a consistency not much different than the brain itself. In fact, most brain tumors which grow from the neuroglia have a much softer consistency than the brain. In a number of these cases I have made incisions for exploration which have resulted in no harm. These incisions I have been able to close with very fine



PLATE I. OSTEOPLASTIC RESECTION OF SKULL.

Fig. 1.—First step, small V-shaped incision for trephine opening. Fig. 2.—Incision through scalp completed and skull cut with the DeVillbiss forceps. Fig. 3.—Osteoplastic flap reflected, dura not yet opened. Note the small ledge at the upper part of the margin of the opening made by chisel.

catgut sutures, which bring about perfect coaptation and control hemorrhage. The sutures when passed with the greatest gentleness have been very satisfactory. I have found the cerebellar tissue much firmer for the introduction of sutures than the cerebrum.

In three of the cases, all of which were cerebellar tumors, in no instance could I elicit the presence of a tumor by palpation which had a deep-seated origin, and if I had not practiced incision into the cerebellum they would not have been discovered.

I want to impress upon you again the fact that an operation for osteoplastic resection of the skull is as devoid from risk as an operation upon the abdomen, provided, however, the patient is in a fit condition. It is not wise to wait too long to localize a tumor. The great benefit which is derived from an operation for decompression is incalculable. The relief from symptoms and the preservation of vision secured in these decompressive measures are manifestly clear to all who have had occasion to observe them. The operation for decompression has a wide field of application. It is indicated in all cases of tumors which cannot be localized. It is also indicated in epilepsy and chronic meningitis with or without hydrocephalus. In cases of tumors one should not be content until a thorough search has been made for them.

Cushing calls attention to the fact, in his subtemporal operation for decompression, that inoperable and unlocalizable tumors do sometimes emerge from their silent situations and show focal symptoms. His bilateral subtemporal decompression operation should be confined to those cases in which a tumor is diagnosed in a nonaccessible situation. It is difficult to make any extensive exploration of the brain through this incision.

One can scarcely realize the amount of good obtained in these palliative operations. In a few of my cases, where the tumor could not be definitely localized, I have made the usual osteoplastic flap and proceeded with a thorough exploration. If a tumor could not be found, or if the tumor was so infiltrat-

ing that complete extirpation was impossible, I have finished the operation by removing the plate of bone in the flap and in this way obtained the decompressive measure.

It has been a general rule to administer iodides and mercury to all patients who have symptoms of intracranial pressure, and I have seen some cases where the administration of these drugs was kept up until the vision was destroyed. I would suggest, therefore, that this practice ought to be curtailed to a considerable degree.

If the patient's condition offers a reasonable chance of surviving the effects of an operation, the propriety of its indication should not be questioned. The resulting hernia cerebri obtained by the removal of a plate of skull is variable in size. The object of the subtemporal decompression operation is to prevent too much bulging. There is a considerable amount of support and protection afforded by the temporal muscle and temporal fascia. The operation is performed by making a semicircular incision parallel to the superior temporal ridge. The incision begins at the external angular process of the frontal bone, is carried upward and backward parallel to this ridge and curves downward in front of the ear and ends at the base of the tragus. The scalp and temporal fascia are dissected downward off the muscle. A retractor is inserted behind the posterior border of the temporal muscle and the muscle pulled forward by an assistant. In this way the temporal fossa is exposed. After the pericranium has been cleaned from the surface of the skull, an opening is made into the skull with a trephine. By means of a Rongeur forceps this opening is enlarged. Most of the squamous portion of the temporal bone and the great wing of the sphenoid are removed up to the temporal ridge on the side of the head and as far as the foramen ovale at the base of the skull. The entire surface of the dura covering the brain in this situation is removed. The middle meningeal artery may have to be tied in this operation. This gives a large opening for the relief of pressure. The size of the hernia resulting from this operation is moderate when compared to decompressive measures higher up on the skull.



PLATE II.

Fig. 1.—Dura reflected, convolutions exposed showing incision and sutures in brain. Figs. 2 and 3.—Flap replaced and sutures in place.

Before leaving this situation, I think it would be wise to consider the operation which is performed for the removal of the Gasserian ganglion. In spite of the results reported by Kiliani of New York, by the injection of alcohol for the relief of tic douloureux, I am unable to verify these results from any personal experience. I have used, however, a solution of 85 per cent. alcohol and cocaine in 1 per cent. solution for the relief of sciatica, with an indifferent degree of success. The duration of the relief afforded with the injections of alcohol at the base of the skull is variable. Of the 190 cases reported by Kiliani, 42 per cent. have had no recurrence; 21 per cent. had a recurrence within eighteen months from the time of injection. In the other cases the recurrence varied from three months to two years. The five cases upon which I have operated for the removal of the ganglion have had no recurrence of pain since the operation. The cases run from four years to eight months since the time of operation. There is no gainsaying the fact that the operation for gasserectomy is anything but a simple one. The relief afforded by this operation is so great that I am inclined to believe in those cases where recurrences have been reported that either the ganglion was not removed or the posterior root was not divided. I do not believe in the Abbe operation. I believe when one divides the posterior root the ganglion should be removed. I have no faith in the interposition of foreign material between the ends of the severed root, and from my experience in this operation, I do not think it is possible to remove a section long enough to prevent the two ends coming together again. It is claimed that by severing the root there is no danger to sloughing of the cornea or loss of vision of the eye. In the five cases which I have had, in not a single instance did trouble come to the patient's eyes. Whether this was due to the method of operating or to sheer good fortune I cannot say.

The operation which I have performed for this affection cannot be considered the method of any particular surgeon. One reads a great deal of the Rose method, the Hartley-Krause method and the Cushing method. They differ only in very

minor details. The method which I have always employed has been the transzygomatic route. I mean that the zygomatic process was resected in every case. The incision begins in front of the tragus, just over the zygomatic process where it enters the temporal bone. It is carried upward in a circular direction about two and a half to three centimeters high, and is carried forward and downward and ends about two centimeters behind the external angular process of the frontal bone. This limb is not carried down to the zygomatic process at its attachment to the malar bone. There is a reason for this, and that is, by not carrying this down the fibers of the facial nerve which supply the frontal portion of the occipito-frontalis muscle are not divided. The incision is carried down to the skull at one stroke of the knife. The zygomatic process is divided subcutaneously both at its malar attachment and its origin. This mass of tissue is retracted downward as far as possible. The coronoid process of the inferior maxilla with the attachment of the temporal muscle may or may not be divided. The temporal muscle is pulled upward and forward as far as possible. The squamous portion of the temporal and the great wing of the sphenoid is exposed and with a trephine an opening is made into the skull. A Rongeur forceps is then used to enlarge this opening and the enlargement is carried through the base of the skull into the foramen ovale. This exposes the mandibular branch of the nerve. While the bone is being rongeured away a right angle retractor is used to lift and compress the brain upward. A good deal of bleeding is encountered in accomplishing this feat. One must work very carefully and very slowly. The operation must be stopped often and the wound tamponated for a little while before one can proceed. There is one point which I wish to emphasize, and that is, one should be careful to remove enough of the skull on the side of the head so that the retraction of the brain may be sufficient to carry on the manipulations at the base of the skull. I have used the ordinary blunt strabismus hooks used by the ophthalmologists for dissecting the inferior and superior maxillary branches. It is during these manipulations that the progress

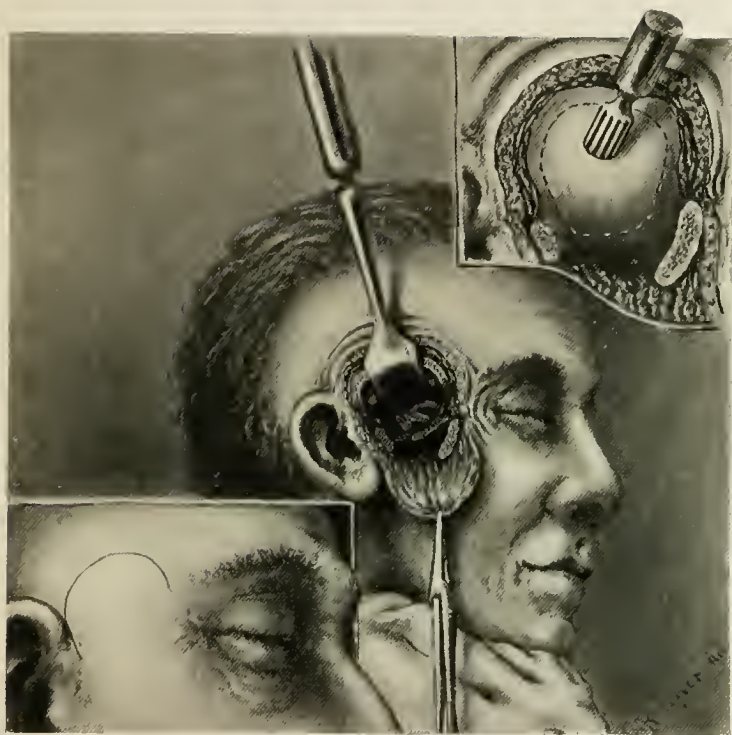


PLATE III. GASSERIAN OPERATION.

Lower left hand figure shows outline of incision. Upper right hand figure shows cranium denuded and zygoma divided and reflected downward. Central figure, brain retractor in position with ganglion and branches exposed.

of the operation is impeded. One can work but a few seconds before the whole field is filled with blood. It is necessary to stop, pack and repack before work can be resumed. I would suggest that none of these branches be divided before the ganglion itself is exposed. They are landmarks which lead you to the ganglion. Once this is exposed into fair view, and the view obtained of this is much less clear than seen depicted in books, the mandibular branch is cut at its entrance into the foramen ovale. The superior maxillary branch is divided at its entrance into the foramen rotundum. Then, if one has the good fortune to encounter a fairly easy case in which the whole ganglion and posterior root can be exposed, the posterior root is divided posterior to its entrance into the ganglion. With a pair of forceps, and I have used the ordinary Carmalt forceps, the ganglion is torn from its bed. The ophthalmic division usually breaks off at a point close where it is given off.

The dangers encountered at this operation are chiefly those of hemorrhage. One does occasionally tear into the dura and a little cerebro-spinal fluid may exude. The place where this is most apt to occur is near the ganglion itself, because the dura gives off a process which envelops the ganglion. There is one other danger, and that is of wounding the wall of the cavernous sinus. The ophthalmic branch is flattened out and lies upon the wall of this sinus, and if one tries to dissect out this branch there is great danger of wounding this structure. This happened in one of my cases. If wounded, there is such a profuse hemorrhage the operation cannot be continued. If the hemorrhage cannot be stopped by the removal of the brain retractor, it will be necessary to pack the wound and defer further operative manipulations to a future date. This is one of the reasons why in the description of the operation above I have not advised the dissection of the ophthalmic branch. The abducens and the oculomotorius nerves lie in close connection, and this is another reason why the ophthalmic branch should be left alone. In the case in which I had to desist from further operation the abducens nerve was injured; this was followed by paralysis of the external rectus producing an internal

strabismus. I had the pleasure of seeing this patient two years after the operation and was happy to see that the paralysis of the external rectus had entirely disappeared.

This operation is best performed with the patient in a sitting posture. The operator stands behind the patient's head and manipulates the brain retractor himself, for there are many little twists and turns in the manipulation of this retractor which help toward simplifying and accelerating the operation. I have used a little device which has helped me much in controlling the hemorrhage and assisted in keeping the wound clean. This is by placing a small gauze pad over the retractor between it and the dura, the edge of the gauze projecting a trifle beyond the edge of the retractor. This serves to absorb a considerable amount of the oozing and gives one a chance for longer intervals of work.

There is an element of danger in using the Hartley suction apparatus, which he employs for keeping the wound free from blood. Unless one is very dexterous and exposes the ganglion quickly, I think the amount of blood lost by the employment of this apparatus would be considerable. The loss of blood in these cases is a matter of much importance. Most cases of neuralgia of the trigeminal nerve come to the surgeon only after every other means of treatment has been resorted to and the patients are very much emaciated, with vitality depressed to an extreme degree and do not bear hemorrhage well. Of the five cases I have operated upon, four were elderly women whose ages ranged from sixty to seventy-two. One was a man.

In the subtentorial operation, I believe it is wise to expose both cerebellar hemispheres. The cross-bone incision of Cushing I consider the best for exposure of these parts. The incision begins just behind the tip of the mastoid process and is carried around the base of the skull, following the *linea nuchæ superior* to the external occipital protuberance around to the opposite side. A vertical incision is made from the external occipital protuberance down to the spinous process of the third or fourth cervical vertebra. In this way one has two lateral flaps, which are lifted with the pericranium from the base of



PLATE IV.—Cushing's "crossbow" incision for subtentorial exploration.

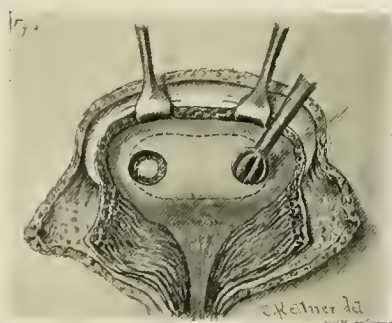


PLATE V.—Shows trephine openings in either side of median line for the introduction of the rongeur forceps.

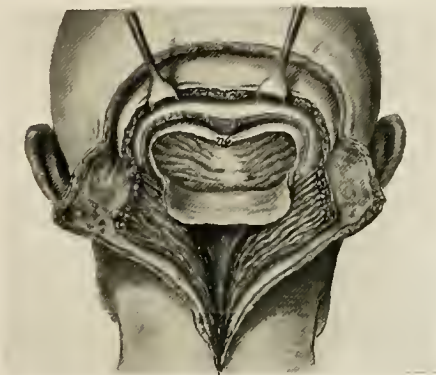


PLATE VI.—Cerebellum exposed, skull removed with rongeur and dura reflected.

the skull. In this situation I wish to state that osteoplastic sections at the base of the skull are not only not necessary but complicate and increase the operative risk of the patient. A trephine is employed to make the openings on either side of the median line in the occipital bones. The Rongeur is then used to enlarge this opening all around. There are a good many sinuses which one encounters in the region of torcula. Bleeding from these *vasæ emissariæ* is sometimes so profuse as to become alarming. I have found the preparation of wax which has been recommended by Horsley invaluable in stopping this bleeding. It is usually necessary to pass a ligature above and below the occipital sinus, which lies midway between the two hemispheres. The dura is then opened along the upper border of the incision and reflected downward. In this way a good exposure of the cerebellum is obtained. The great benefit obtained in the exposure of both sides is incalculable. The cerebello-pontile angle is made more accessible and this is considered a favorite seat for tumors. Under these conditions, with the exposure of both cerebellar hemispheres, they can be pressed from side to side without injury to their structure. The evacuation of the cerebro-spinal fluid increases the amount of space for exploration. If unable to find the lesion by palpation and lateral dislocation of the two hemispheres, then transverse incision into the substance of the cerebellum is advised. As I stated above, in three of my cerebellar cases the tumors were situated in the substance of the hemispheres.

In regard to the position of the patient at the time of the operation, I have adopted the sitting-up posture for all the supratentorial operations. There is less bleeding and less anæsthesia required with patients in this position. I have never employed any of the methods which have been described by Crile, that is, the pneumatic suit, nor the sequestration anæmia of Dawbarn of New York. In the subtentorial operation I have employed the method of Cushing, with the face-down horizontal position.

Most of the operations above the tentorium are comparatively easy. The operation upon the ganglion and the cerebellum are vastly more difficult. The operation upon the

pituitary body is in such an indefinite state at the present time and so few of these operations have been performed I do not think it wise to consider them at all. Cushing of Baltimore and Halstead of Chicago are the only men in this country who to my knowledge have accomplished this surgical feat. I am informed that Von Eiselsberg of Vienna reported at the recent meeting in Washington seven operations for the removal of this body. In New Haven, thus far, the operation has not been performed.

I think it would be wise to say a few words in regard to the anæsthetic employed in these cases. Whether chloroform or ether is used I think to be a matter of personal choice. Previous to the time of hospital facilities in New Haven, it was my custom to administer chloroform in every case. Since I began to work in hospitals, ether has been my choice. On account of the very contracted field for operations upon the head, we have recently adopted at the New Haven Hospital a method of retropharyngeal etherization which leaves one person, the anæsthetist, entirely out of the field of operation. The apparatus has been constructed by Mr. Thoms, a senior in Yale Medical School. This method has been employed in a number of cases of operations upon the head and neck to my complete satisfaction.

I think that one can readily see from what I have just said, and from the results which I have obtained, that these operations when performed with the skill required of any operator, are not as formidable as may at first be supposed. I will admit that the results obtained in tumors of the brain are not as satisfactory as they should be at present or will be in the future. With the increased confidence of the profession, earlier diagnosis and a more prompt intervention, the results will necessarily improve. I think I have demonstrated that the operation itself is comparatively devoid of danger.

In conclusion, I wish to express my sincere appreciation to Dr. Max Mailhouse for the very kind courtesy he has shown me by referring a very large number of these cases to me for operation. I have found his diagnosis invariably correct and

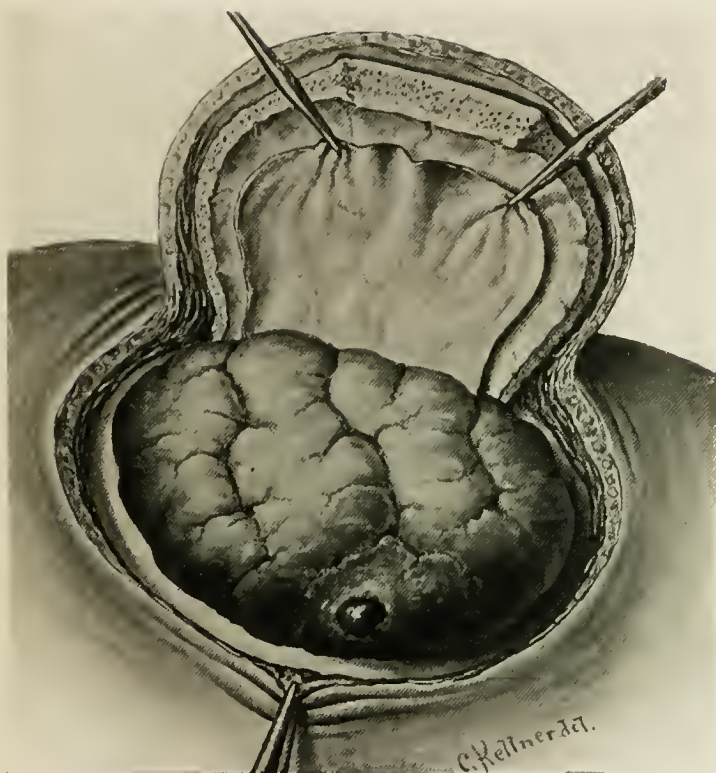


PLATE VII.

Osteoplastic resection for subcortical hæmorrhage. Large mass of coagulated blood removed. Small black focus shows where the hæmatoma had just forced its way through the brain cortex.

the lesions have been demonstrated by operation. I wish to state also that the technique which has been employed in these cases was perfected by Dr. Leonard W. Bacon and myself, working together. I also wish to thank Mr. Kellner for the artistic illustrations and photographs he has been kind enough to make for me.

DISCUSSION.

DR. LEONARD W. BACON (New Haven): I am sorry that, owing to the interruption in the reading of the paper, I was not able to hear the last part. I was much interested in the first part.

I have very little to offer in the way of remarks; and what little I have, is partly based on a case of brain tumor in which the author of the paper was kind enough to assist me, and in which Dr. Max Mailhouse assisted in making the diagnosis. This tumor was the size of a turkey egg, and was a hard psammoma of the less malignant type. It was removed without any difficulty.

The interesting part of the condition was the after-progress of the case. A hole was left in the brain-substance as large as a turkey egg, or larger. Things progressed very smoothly indeed, as we had anticipated, until such time as the swelling brain filled out this vacant place. I foresaw that probably when the brain should reach the inside of the cranial vault, there would arise a repetition of some of the pressure symptoms. This occurred. When we came to withdraw the gauze, the first withdrawal was without incident; and the wound as repacked with a smaller quantity. This procedure was repeated on the third day, without incident; but when we came to withdraw the last piece of gauze, and there was no body left in the cavity to act as a cushion, we had a repetition of the pressure symptoms. The temperature rose; there was some vomiting, and a mild type of coma recurred. During an interval of three or four days, the progress of the case was somewhat in doubt. After that, the patient went along nicely, and the woman is very well to-day. So far as I know, that was the first case of brain tumor removed in this city with the survival of the patient.

Another case was one of brain abscess, and seemingly emphasizes the importance of what Dr. Verdi brought out in the first part of his paper; that is, with regard to delay when cerebral symptoms assert themselves. There was a young woman in another part of the state who had sustained a fracture of the skull. She was removed to a hospital and made a partial recovery. She then went home, but after a few weeks she developed symptoms of brain pressure. I trephined, and emptied from the cerebral cavity nearly half a pint of pus. It was the largest brain abscess that I have ever seen. There was almost complete

blindness when the operation was done; and there was recovery, except for the sight. The girl is blind to-day. If the operation had been done a week earlier, I think that there might have been recovery of the sight. She is living and well and strong, but she is blind; and that bears out what I said, the important fact brought out by the writer that when cerebral compression is present, interference must not be too long delayed if we are to get good results.

DR. MAX MAILHOUSE (New Haven): First, I wish to agree with what Dr. Verdi said when he stated that my diagnosis was correct only in most of the cases. The man who never makes a mistake is the one to be feared. I feel confident that the reason why the doctor and I have gotten on so well together is that we are willing to accept suggestions from each other and to profit by the work of others.

It was with this feeling that I suggested to Dr. Verdi, in a certain case of cerebellar tumor, after the marked bulging of the cerebellum from the great intracranial pressure, that a slight incision be made between some of the laminae, thus possibly permitting the pressure to extrude the growth. This actually took place, and the patient was saved the loss of any material amount of brain substance. This same procedure might equally well be pursued in other areas of the brain, and with equal benefit. Too much haste is sometimes made, and not sufficient time given nature to bring a growth into the visual operative field. Opinions as to the presence of neoplasms based solely upon the appearance of choked disk and pain are sometimes erroneous, as specific disease at the base may give this picture. We had one such case, in which, upon operation, nothing more than a milkiness of the pia was found, and no evidence of intracranial pressure. The papill-œdema was undoubtedly of inflammatory origin; yet, when in doubt, and the optic disks are in such condition as to threaten vision, the safest procedure for the patient is at least a decompression. Delay is dangerous; and here let me say that while it is often difficult to get the consent of the friends of the patient to an operation, when vision is failing or they can be made to realize that permanent blindness is probable, the operation is the more readily accepted. Here, again, the need of the ophthalmologist; in fact, in every case of cerebral neoplasm, the surgeon, neurologist, and ophthalmologist should work hand in hand, and the patient should be under constant observation.

In cases of fracture without extreme evidences of local injury, when the symptoms indicate increasing hemorrhage, the unilateral dilatation of the pupil is often of aid in localization. Of greater value, however, is the occurrence of unilateral convulsions on the contralateral side. Even jactitation may be sufficient to indicate the side of the brain subjected to irritation, and note should be made of the fact that the

quiescent limbs on the one side may be related to the uninjured cerebral hemisphere.

That convulsive phenomena indicate cortical irritation was evidenced in the case reported by Dr. Verdi, in which operative procedure revealed idiopathic hemorrhage involving the cortex. In this case also, as in many hemorrhagic cases, immediate incision of the dura at the time of the operation, in order to relieve pressure, was indicated. I desire to add just one word of caution in operating upon old cases of depressed fracture, and that is in the raising of the bone-flap. This should be done very slowly; and the flap should be dissected away cautiously, so as to avoid tearing any brain substance adherent to the membranes.

One point more, if I have time: About a year ago, I noted in one of the medical journals a procedure for aiding the removal of cysts and other soft neoplasms. This was by means of a suction apparatus, the tubing being attached to a water faucet. Possibly a very soft atomizer bulb or a Politzer bag with a medium-caliber tubing, sterilized, of course, and worked by the hand of the operator, might be made use of for that purpose. Œdema of the brain, from undue manipulation, may be an unpleasant sequel of the operation.

In the prognosis of the results after operation, one should be guarded, especially in view of the possible presence of multiple tumors, infiltrating gliomata, or inaccessible growths.

DR. WILLIAM H. CARMALT (New Haven): The last sentence of Dr. Mailhouse's remarks, which was all that I heard, leads me to speak of a case of infiltrating glioma of the cerebellum in a patient previously operated upon unsuccessfully by decompression, because the boundaries of the tumor could not be made out. At the subsequent operation by Dr. Verdi the gliomatous tissue was simply scraped away, a definite boundary not being found. The result has been entirely satisfactory, the patient, who at the time of this operation was unable to walk without assistance, now riding his bicycle and indulging in all the exercises of a boy of sixteen more or less. There has been no recurrence of the tumor. I think these cases are worth putting on record.

MEDICAL PAPERS.

The Treatment of Pulmonary Tuberculosis Outside the Sanatorium.

DUDLEY B. DEMING, M.D., WATERBURY, CONN.

The first and most important factor in the treatment of tuberculosis is to prevent its communication to others, and the second is to benefit the patient. I firmly believe that with the vast majority of patients both these factors are more advantageously carried out in a sanatorium than at home. The sanatorium is undoubtedly the model of life for a consumptive—there he learns what to do and what to avoid; he is shielded from the turmoil of business life; he is obliged to rest; his food, drink, and clothing are all arranged for him; he is under constant supervision and is trained to live so as to minimize the risk of communicating his disease to others. It is impossible to overestimate the educational value of sanatorium life and influence.

But, unfortunately, only a very small proportion of the vast number of victims of this disease can avail themselves of the advantages of residence in sanatoria. The three chief reasons for this are: First, the nature of the disease itself; second, the sociology of the situation, and third, the rules which are in force in most sanatoria.

The nature of the disease is essentially chronic, and it takes the patient a long time to die if he is going to—a not much shorter time to recover should he be so fortunate; therefore, the time spent in a sanatorium by the individual case is very protracted. All this time he is deprived of his earning capacity and is put to extra expense to follow out the treatment. But it is a disease of the poor (it is they from whom infection comes to other classes of society), and for one person in comfortable circumstances who has tuberculosis, there are ten shopgirls and day laborers who, with their families, must live

on from six to fifteen dollars a week. For these a long sojourn in a sanatorium at the so-called nominal price of seven dollars a week is impossible. The rules of most of the sanatoria exclude advanced cases, and even if the poor should be fortunate enough to secure the means to keep them at a sanatorium, too often the disease has progressed beyond the stage at which they can be admitted; or, if after admission the disease continues to progress, they are sent home to die. Other cases stay their allotted time and are discharged as improved, arrested, or cured.

Thus we see that in spite of the manifest advantages of sanatorium treatment, a very large proportion of patients must of necessity be treated outside of sanatoria. With a view to reaching this class of cases in Waterbury a concerted effort was made by the Anti-tuberculosis League in the spring of 1907. Rooms were secured and a small dispensary started for tuberculosis patients. I consented to devote one morning a week to the dispensary work, examining and prescribing for the patients. We secured the services of two graduate nurses, whose duty it is to make frequent visits at the homes of the patients and to train them, if possible, to follow the *régime* prescribed.

Perhaps the most effective work of the nursing staff has been in discovering suspicious cases in the households where there are more advanced cases, and persuading these to go to the dispensary for examination; then where the disease proved to be present, inducing them to lead the life requisite for a cure, or else placing them in some sanatorium.

Although the dispensary has had the advantage of considerable sums of money which could be devoted to aiding the patients to secure better rents, with suitable sleeping porches, and to help to furnish them with nourishing food, the circumstances under which the patients live frequently make it impossible for them to carry out the proper technique. Even where their intentions are the best and they are acting with the utmost confidence that they are doing the right thing, they will unconsciously do or leave undone something which nullifies all the

care they have taken. For instance, when the mother of a family is also the caretaker of a consumptive, we see her leave her cooking to run out and arrange the patient's pillows, or perhaps to place the sputum cup where it will be more accessible to the patient; then she goes back to complete her preparations for the meal without stopping to wash her hands—a trifle in technique which she is not sufficiently trained to appreciate. Then again, patients are often fairly careful about the sputum cup, and it may be the object of close attention on the part of the family, yet they will allow it to stand on the kitchen table or will entrust it to a child to empty, so that it becomes a serious source of danger. When the household worker, whose hands are already more than full, is pressed into service as a nurse, mistakes and lapses like these just cited are certain to occur.

The casual observer, seeing the patient spending his time out on the porch and using his sputum cup, might conclude that the case was a demonstration of the triumph of home treatment; close inquiry, however, too often reveals to how great a risk the other members of the family are exposed.

Many times the patient and his family start out with the firm intention of doing exactly as they have been instructed; but gradually they grow careless, and seeing no bad results, they become indifferent to the teachings of the physician and nurse. If tuberculosis were more sensational in its development we should get better results. As it is, the period which elapses between the exposure and the development of the disease is so long that many cannot be brought to see the connection between the two. They cease to believe what they have been told and fall into an attitude of indifference from which it is impossible to rouse them.

The most dangerous cases are the advanced ones, for even if they are disposed to take every precaution, they are too weak to do so, and at this stage they furnish the greatest number of germs. Then, too, the constant attention which the patient requires at this time results in the sickroom becoming a sitting-room for the members of the family. For the protection of

the family I always try to persuade them to keep such cases in bed out on their porches until death relieves the household of further care. Out of doors the natural germicides, sunlight and air, soon destroy the bacilli. Toward the end the patients frequently complain of cold, except in the warmest weather; nevertheless, they should be kept out of doors, for although this may seem unkind, I believe that it results in the greatest good to the greatest number.

Another class of cases which is a source of unending worry to physicians and nurses is the so-called arrested or improved cases, who have been discharged from the sanatorium with the permission to do light labor. They come to the dispensary with the request that suitable occupation be found for them. Many of these patients by nature and training are fitted only for hard manual labor; or if they are capable of doing the kind of work allowed, the question of the danger of infecting others must be considered. It is comparatively easy for a patient sitting on a veranda of a sanatorium to remember to put his handkerchief in front of his mouth when he coughs, and to wash his hands if exposed to contamination, and in other ways to avoid the risk of carrying infection. It is quite another thing to make that same individual follow out these rules when both hands are engaged in some occupation—often piecework, where his earnings depend on the amount of work done per day.

We have seen with how much danger to the family and the community the home treatment of tuberculosis is fraught. Let us now consider the patient. While the home is not the ideal place for a tuberculosis patient, it is less hard for him than for his family. Occasionally, when the home is well situated and has a good porch where the air is not contaminated by smoke, the patients do remarkably well, especially if they have had the advantage of a few weeks' residence in a sanatorium. But it is exceedingly difficult to get them to spend sufficient time out of doors during the winter months—not that they avoid the cold, for they soon become accustomed to it; but they lack the stimulus of having others around them who are taking the

cure, and it is a great temptation to go into the house to seek the companionship of some member of the family who is too busy or too sensitive to the cold to remain with the patient. It requires a high grade of moral fiber to maintain the persistent and long-drawn-out struggle that must be kept up in fighting tuberculosis, and many lack the self-control necessary for forcing themselves (and their families) to live up to the required standard.

When all the conditions are at hand for the proper treatment of a tuberculosis case, the success lies primarily in making an early diagnosis. The question of diagnosis is somewhat out of the scope of this paper, but I feel impelled to emphasize the fact that an early diagnosis can never be made by a superficial examination—the patient should be stripped to the waist, and sufficient time and care expended to find any possible abnormal signs. Even then it is frequently necessary to make several examinations and to watch the patient carefully before a decision can be reached. Never act on the assumption that the office fee does not pay for the time required to make a thorough examination—be thorough and charge the time to the patient; or if this is not practical, send him elsewhere. Don't think because the patient is fat that he has not tuberculosis. Two years ago a patient came to me with the history of exposure and the complaint of feeling slightly less vigorous than formerly—no cough, fever, night sweats or loss of flesh. On examination I found that she had a small lesion at the left apex—I also got a positive ophthalmic reaction. I told her the diagnosis and advised her to go to Wallingford. She made all preparations to go, then a neighbor advised her to see another physician. This she did, and consulted a man of undoubted ability. She asked him to examine her chest, on account of previous exposure to infection, but said nothing of the diagnosis which had been made. He glanced at her, saw that she was stout and healthy-looking, thumped her a few times on the back, through her clothing, put his ear against her dress, and told her she was nervous and needed a tonic—for which he charged her the office fee of one dollar. After

that assurance from a man (to quote the patient) "whose instinct of diagnosis was so keen that he did not need to make a more thorough examination," the patient left me and went home satisfied. Patients readily accept a diagnosis which pleases them, and it is usually far easier to make incipient cases believe that they have not tuberculosis than to convince them of the truth. A year later this patient came back to me; this time I had no difficulty in persuading her to believe that she had tuberculosis. I again advised her to go to Wallingford, but unfortunately the disease was so far advanced by this time that she was refused admission. She is still alive, but is a well-advanced case with no hope of recovery.

In the early stages there is probably no other chronic disease which shows greater tendency to repair, under favorable conditions of treatment. However, favorable results do not obtain in all cases, and the enthusiasm of both patient and physician is often severely tried. The time allotted to treatment is almost invariably too short. The majority of patients look and feel well long before the lung has healed. This is a source of most serious danger, for it frequently leads the physician as well as the patient to be too sanguine. If the patient felt weak and ill until full recovery were effected the percentage of cures would be many times increased.

For the successful treatment of tuberculosis every detail must receive as careful supervision as would be given in a case of typhoid fever.

Rest and Exercise. The proper regulation of rest and exercise is most important. It is always wise to err on the side of rest. The value of rest in all acute and subacute stages of pulmonary tuberculosis is not fully appreciated. Exercise to the point of fatigue results in autointoxication and lessened assimilation of nourishment. When treatment is begun the rest, especially in febrile cases, should be absolute. All business cares, letter writing or study should be forbidden. For a time the patient should see few visitors—preferably only one member of his family. When the afternoon temperature has subsided below 99.5°, or in chronic febrile cases is not over

100°, a moderate amount of exercise may be allowed, but must be regulated to suit the individual case. The contraindications to exercise are fever, loss of weight, bloodstreaked sputum, rapid pulse, and marked dyspnoea on slight exertion. After the disease has become arrested, exercise sufficient to put the patient in condition to take up the occupation he is going to follow may be instituted.

Diet. We have as yet no exact standard of nourishment for the consumptive. It is a question how far the appetite of the patient can be taken as a guide and how much it should be forced. I think that at the present time there is a tendency to err on the side of overfeeding. We should remember that rapid gain in weight does not necessarily mean rapid gain in strength. Occasionally we find a patient who has to be urged to eat, but usually with the life out of doors and good hygienic treatment the patient can eat all, and even more than he requires. Furthermore, patients who are stuffed are frequently the victims of attacks of indigestion which make it necessary to restrict their diet for a long time, and before their stomachs are working properly again they have lost all that they had previously gained. It is never wise to tell a patient to eat plenty of good nourishing food and a lot of eggs and milk. Their diet should be carefully planned, the menus made as varied as possible, and definite hours for eating arranged. An excellent plan is to give the person in charge of the patient a menu for every day in the week, conforming as nearly as possible to the circumstances of the patient. Patients with high fever frequently have difficulty in digesting their food, and their diet ought to be restricted to the point where they can take it without subsequent discomfort.

Climate. The value of certain climates has of recent years been called into question, and to-day opinion rests largely on the belief or preference of the individual physician. I myself have had little opportunity to observe the effects of different climates, as the majority of cases which come under my care are not in financial circumstances which permit a change of climate.

It seems probable that in many instances the benefit ascribed to change of climate is due to the changed mode of life which the patient adopts. He is more apt to stay out of doors and avail himself of the benefits of fresh air when he has traveled a thousand miles to get it than he would be at home. In any climate fresh air day and night is an absolute necessity and ameliorates many of the distressing symptoms of the disease, such as cough, dyspnoea, fever and nervousness.

Fever. In all cases previously afebrile an afternoon temperature above 99.5° should be treated by absolute rest in bed out of doors. This is the most efficient method of treating temperature in pulmonary tuberculosis. The amount of rest necessary varies with the persistence of the fever. A few days' rest in bed will often bring the temperature down to normal, but the patient should not be allowed to get up until it has remained below 99.5° for a week or more. In chronic cases it is frequently impossible to get the afternoon temperature below 100° , even after rest in bed for several months, and these patients, especially if the appetite is poor, are often benefited by a very limited amount of exercise, as a walk of not over 200 yards two or three times daily. In these cases one should be very careful not to overlook some nontubercular intercurrent disease which may be responsible for the temperature. Cases running a high temperature can be made more comfortable by a tepid alcohol or salt sponge in the evening, followed by an alcohol rub, but hydrotherapeutic measures should be applied with great caution and the patient be carefully watched for signs of exhaustion. In my experience medicinal treatment of fever accomplishes very little. Some fair success has been reported lately from the use of pyramidon—I have had no experience with it.

Cough demands careful attention. Many times it is intentionally exaggerated by the patient, who is imbued with the idea that he must cough until he has entirely cleared the lungs. He should be instructed that this is unnecessary and may be injurious. In some patients this symptom is helped very much by rest in bed. Hot water, or hot milk and vichy, taken

an hour before bedtime may lessen the cough which many patients experience when they lie down. An incessant cough which prevents sleeping must be checked even if sedative cough mixtures have to be used. The paroxysmal cough which comes on after eating, causing the patient to vomit his food, is a serious complication and taxes the resources of the physician to the utmost. No treatment for this form of cough gives very satisfactory results. Diminishing the amount of fluid taken with the meals and absolute rest for one hour after eating may lessen the severity of the paroxysms. Painting the pharynx with 20 per cent. antipyrin or 4 per cent. cocaine has been recommended. Inhalations of tincture of benzoin compound, menthol or creosote, or occasionally the use of expectorant mixtures, may be beneficial. I rarely use sedatives to check the cough.

Hæmoptysis. In very mild hemorrhage no treatment is of any avail. The milder cases tend to recover spontaneously. In these the chief danger comes from aspiration of infected blood, and therefore large doses of morphine should not be given, for it prevents the cough which should clear the lungs. The first thing to be done in a case of hemorrhage is to calm the fears of the patient and to avoid all excitement. The patient should assume a semirecumbent position and should be forbidden to talk. Small pieces of cracked ice may be given to add to the comfort of the patient, who often suffers from thirst, and this, furthermore, has a good psychical effect if he thinks that it tends to check hemorrhage. To lower the blood pressure in the pulmonary circulation a number of methods are used. A bandage on the limbs, tight enough to prevent the venous return flow, may be of service. By this method the patient is bled, so to speak, into his own limbs, and when the pressure in the pulmonary circulation is sufficiently reduced to stop the hemorrhage and allow a clot to form in the eroded vessel, the bandages may be released and the blood allowed to return to the body.

Drugs which reduce blood pressure, as amyl nitrite, nitroglycerine, sodium nitrite, and aconite are of service. Do not,

as is so frequently and so illogically done, increase the blood pressure by the use of vasoconstrictors. For nervous and excitable patients morphine in small doses may be given, but its use is not unattended by danger for reasons already given.

Night Sweats. Hygienic treatment greatly decreases their frequency. The skin should receive careful attention. Clothing should not be too heavy and should be kept dry. Just before going to sleep the patient should be sponged with alcohol and water. Many drugs have been recommended for this symptom, but none seem to be of much value.

Tuberculin. The use of tuberculin is undoubtedly of value in many cases. It is, however, much more available for sanatorium than for dispensary use, as its effect on each patient must be carefully watched. Personally I have had little experience with tuberculin except for diagnostic purposes, and therefore am not in a position to discuss its merits.

CONCLUSIONS.

As we have stated, tuberculosis is a disease which needs careful medical attention and nursing.

The attempt at treatment outside of sanatoria for patients in the social station in which the disease abounds is a poor substitute for sanatorium treatment.

The disease will not be eradicated by the establishment of sanatoria which admit only incipient cases, while they reject the advanced cases and discharge cases which fail to improve and will sooner or later become advanced cases and thus spread the disease among others.

We hear a great deal about tuberculosis being preventable—it may be, but not without the expenditure of vast sums of money to care for advanced and chronic cases in sanatoria, and to aid the dependent families thus deprived of wage-earners.

While a conscientious and properly trained arrested case is often, by his example, of distinct benefit to the community or shop to which he returns, the giving of employment to uncured cases discharged from sanatoria is not unattended by danger to the community.

DISCUSSION.

DR. DAVID R. LYMAN (Wallingford): The subject of this paper properly takes in the biggest portion of the treatment of tuberculosis, for there is no case of this disease that does not have to be treated outside the sanatorium. The sanatorium does only a part of the work in any case. The treatment of tuberculosis may be divided into two parts, the treatment before the arrest of the disease and the treatment after the arrest of the disease. Practically all that the sanatorium does is to arrest the disease and put the patient on his feet, so that he may go home and work with his doctor to accomplish the rest. Every tuberculosis patient needs treatment for years after he gets home from the sanatorium. This is, to my mind, the chief stumbling-block in the treatment of this disease. We have hitherto paid too little attention to the patients after they get out; but now we try to get in touch with them afterwards, in their home life.

The chances are that if the patient goes back to his family doctor, the latter will forget that the most dangerous point in the case is when the man has got where he looks and feels perfectly well and has no symptoms. He then has an anatomical tuberculosis, but not a clinical one; and he must be watched for several years, to make certain that this anatomical tuberculosis does not develop into a clinical one. Ambrose Paré said that he was interested in cases, but still more so in persons. It is not the disease that is interesting, but the man. We often see cases of tuberculosis carried on to arrest by the general practitioner as thoroughly as in any sanatorium. The trouble is that if the general practitioner carries his case on to arrest, he says to the patient: "Now you are all right, except for a slight cough; come back, if you are feeling badly." The patient should come back, whether he is feeling badly or not, at regular intervals for examination. He must be told that the trouble has not cleared up yet, though he is better; and that he must be still helped for a year or two before he will be quite well.

Another way for the general practitioner to help the patient is in regard to occupation. I do not believe that a good indoor sort of work is so bad as it is often considered to be. The work must be light and suited to the patient's strength. For men in stores or in watch shops or factories, sitting down, there is no physical strain and no exposure. If you can regulate the patient's life for the fourteen hours of the day spent outside the shop, you can very often get him well after a brief interval of training in the sanatorium. The point of having a sleeping-porch is most important. If you can do that, you are sure that you have the patient out of doors a good part of the time. If a man is working in a shop, the doctor, who is usually a man of influence in the community, can nearly always induce the patient's employer to give him a favorable position.

Another point is the question of feeding. I do not believe in forced feeding or overfeeding. We give the patients meat at two meals a day, and allow no raw eggs. The average gain in weight in our sanatorium last year was 17.9 pounds apiece, while the highest gain in any other eastern sanatorium was 15.1 pounds. Dr. Landis, in the Phipps Institute, Philadelphia, found that the incidence of ulcers was exactly the same as in Professor Welch's series of two thousand autopsies. Most of the stomach symptoms were due to forced feeding and overloading the stomach.

DR. HENRY F. STOLL (Hartford): A couple of months ago the *Journal of The Out-Door Life* contained an editorial on the Treatment of Tuberculosis Outside of Sanatoria, and one of the statements made was that there are a good many people who can work and get well from tuberculosis, a good many who can play and get well from tuberculosis, but very few who can both work and play and get well. If we impress this upon the patients and look out for the fourteen hours when the patient is not at work, he will get along. If the men will go to bed at half-past seven, a good many will get well and stay well under home treatment and, at the same time, not have the pecuniary loss of going to a sanatorium.

Regarding tuberculin, I think that it is hard to control dispensary cases, unless you have an extremely good visiting-nurse association; but with private patients, you can get very good results. It relieves the toxic symptoms, and that is a great help. Statistics show that patients who take tuberculin relapse less frequently and live longer than do those who do not take it. It should not be used by a person unless he has had experience and has observed others use it, as great harm can be done if it is not used carefully.

DR. IRVING E. BRAINERD (Wallingford): The treatment of tuberculosis outside the sanatorium is undoubtedly preventative treatment. Dr. Deming brought out one point, that when a patient coughs, he should put a handkerchief before his mouth; but I have never seen, in any book that I have read, in the pamphlet issued by the State Board of Health, or anywhere else in print, any precautions mentioned that the patient should use regarding the disposal of that handkerchief. We should bring up that point. The handkerchief should be well taken care of afterward, and, not stuffed into the pocket with damp sputum on it.

DR. DUDLEY B. DEMING (Waterbury): Regarding the question of keeping the patients out of doors, I think the matter of climate and location must be taken into consideration. Getting dust into the throat

is an important factor in this consideration. One of the greatest advantages of keeping the patient out of doors, even when it injures him, is the lessened risk of exposure to other members of the family.

Regarding the care of the handkerchief, that is an important point. I think that a piece of gauze which can be burned, sufficiently thick so that it will not wet through, is better than a handkerchief.

Some Features of Rectal Alimentation.

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While it has long been the custom to administer nutrient enemas by the rectum, the value of this method of artificial feeding has often been questioned by physiologists and clinicians, because of its failure to accomplish beneficial results. This no doubt, in many cases, is due to the composition of the enemas used. A wide difference of opinion exists, between the two classes of investigators mentioned, as to the comparative absorptive powers of the rectum for the different food stuffs. All seem to agree that water and a certain amount of salts are absorbed, but beyond that there are two divergent views.

On the one hand, it is claimed that the nutrient enema owes its virtue solely to the salts and water therein contained and that the rectum has not the power to utilize the other food constituents, such as sugars, starches, proteins, and fats.

On the other hand, it is maintained, in spite of the chemical propositions involved, that the mucous membrane of the rectum and sigmoid flexure has the power to absorb certain nutrient materials and pass them into the blood vessels and lymphatics in sufficient amounts to sustain life for a period of weeks. This latter contention is supported by competent observers, not only on the theory that the rectum itself possesses the inherent power of absorption; these observers go a step further and state that the injections of nutrient enemas are carried by reversed peristalsis into the small intestine, where they are acted upon by the alimentary digestive secretions, so that the function of absorption takes place in the same way as that resulting from food taken through the mouth. The following *résumé* may be found of interest in this connection:

In 1894 Grützner (1) found that certain easily recognizable substances, such as starch grains, hair or charcoal, when

injected into the rectum, suspended in saline solution, were carried by reversed peristalsis into the small intestine, and in some instances even as far as the stomach.

In 1902, Cannon (2) introduced into the rectum of certain animals large or small amounts of food mixtures of different consistency, containing bismuth subnitrate, and then studied the results by the use of the X-ray. Cannon's experiments prove that in every instance antiperistaltic waves were set in motion by the injections and the material was thereby carried to the cæcum. Small injections of nutrient material never passed this point. The larger injections, however, did not stop when they reached the ileocæcal valve, but were carried high up into the small intestine. After such nutrient injections were given, Cannon frequently observed the normal rhythmic segmentation of the intestine, which produced the same effect upon the food as if it had passed through the stomach in a normal manner.

Experiments on dogs, carried on in 1869 by Bauer (3) under the direction of Professor Voit, proved that all proteins were largely absorbed, as shown by an increase in the urinary nitrogen. He ascertained the daily excretion of urea in starving animals and then gave rectal injections of albuminous substances, peptone solutions, fat and raw starch. Following these injections there was a marked daily increased elimination of urea, which was taken as evidence that the albuminous substances were absorbed by the large intestine. An examination of the fæces the next day failed to reveal any starch or sugar, and he therefore concluded that starch was digested in the large intestine. In his experiments the fats were only slightly absorbed. Bauer also mentions that when sodium chloride is added to protein solutions there is an increased absorption.

Rast (4) claims that 30 per cent. to 95 per cent. of protein is absorbed when injected into the rectum. If large quantities are used the intestine is irritated, causing a decreased absorption. This author believes that the great value of milk when injected is due to the lactose present which is readily absorbed.

According to the observations of Huber (5) and Leube, milk proteins are not readily absorbed unless peptonized, and eggs alone are very slowly absorbed. If, however; sodium chloride is added there is an increased absorption.

Dr. O. F. F. Grünbaum (6) used ox serum in rectal feeding, and selected this particular substance because it contains a constant amount of protein, which he says is easily absorbed by the mucous membrane of the large intestine. It does not require any tedious preparation and does not give rise to offensive stools. He injected 90 c.c., equal to 38 gms. of protein, every four hours. By adding 60 c.c. of milk to each enema, the protein diet was raised to 51 gms. He believes that carbohydrates in the form of starch or glucose are readily absorbed when given in solution by the rectum, and if the strength of the solution is less than 15 per cent., it is well retained and does not cause irritation; therefore 40 gms. may be introduced during twenty-four hours. From Grünbaum's personal observation 30 gms. were absorbed without the production of glycosuria. Fat, he says, is not easily absorbed by the mucous membrane of the rectum.

The studies by Edsall and Miller (7), in 1900, demonstrated that fats and proteins are poorly absorbed by the rectal mucous membrane, and the amounts taken by this method are extremely small when compared with feeding by the mouth. In a paper published six years later, Edsall (8) says that proteins, fats and carbohydrates are absorbed to some extent, but not enough to prevent starvation.

Pasteur (9), London, treats all cases of gastric ulcer by giving enemas of warm water without any food stuffs at all. From 6 to 10 ounces of water are given every four to six hours and this is kept up for periods varying from one to three weeks. He claims his results have been better and the patients easier to manage than formerly when milk, eggs, etc., were given.

Both Leube (10) and Fleiner (11) claim that nutrition cannot be preserved by feeding per rectum alone and that feeding by the mouth must begin as soon as possible. It is maintained by a few investigators that 10 gms. of fat and 20 gms. of

protein are the maximum amounts that can be absorbed in twenty-four hours. In order to preserve nutritive equilibrium, the body at rest requires 1,800 calories per day. Therefore, with the above figures there would be a marked deficiency of calories.

The results of many more investigators could be quoted, but they would only tend to show the wide differences of opinion that exist as to the absorptive powers of the rectum.

During the course of my practice it has been necessary many times to resort to rectal feeding in cases where the stomach was unable to perform its natural functions. Patients have been kept on rectal enemas for periods ranging from one to four weeks. While I have observed this in a clinical way only, I have always been skeptical as to the absorptive powers of the rectum for anything except water, and in those cases where patients have depended entirely on rectal feeding I have inclined to the belief that the nutrition furnished to the body was derived largely from the tissues themselves and not to any appreciable extent from the nutritive enemas. In other words, that life is sustained in such cases by drawing upon the individual's own supply of fat instead of being dependent upon the rectal feeding. Although I have given rectal enemas as a routine measure, I have been extremely doubtful as to their nutritive value, and having discussed the matter with Professor Lafayette B. Mendel of Yale University, I made, at his suggestion, a series of experiments in order to ascertain by first-hand evidence whether the mucous membrane of the rectum is capable of absorbing nutrients, and if so, whether the result of such absorption is sufficiently pronounced to sustain life for an appreciable length of time.

In the course of these experiments I was assisted to a large extent by Professor Mendel and desire at this time to acknowledge my appreciation.

To determine to what extent rectal absorption is effective, I have given injections of potassium iodide, sodium chloride and solutions of dextrose. These materials were selected because they were easily recognized in the urine and fæces.

After rectal injections of potassium iodide, dissolved in 100 c.c. of water, I was able to detect the iodide in the urine and saliva in all instances after intervals varying from eight to twenty-five minutes after the injections were given. The experiments with sodium chloride were of a more elaborate nature and covered a period of weeks. Varying amounts were taken into the system, and in this case both through the mouth and rectum, for the purpose of showing comparative results of absorption by these two methods.¹

To my surprise I found that in the case of the salt injections the absorption from the rectum was quantitatively almost as complete as in the case of oral administration, for in both instances there was a marked increase of the salt output of the urine, and only a slight trace found in the fæces when as much as 10 gms. had been taken by rectum. The following diagram will show more clearly the results obtained.

An examination of the fæces of healthy individuals failed to reveal any sodium chloride, but the fæces of patients suffering with digestive disorders, such as mucous colitis, intestinal fermentation, bulimia, tubercular diarrhœa, pancreatitis and hyperchlorhydria, showed quite an appreciable amount of sodium chloride. After the taking of laxative drugs, such as phenolphthalein, aloin, and calomel, sodium chloride was also found in the fæces.

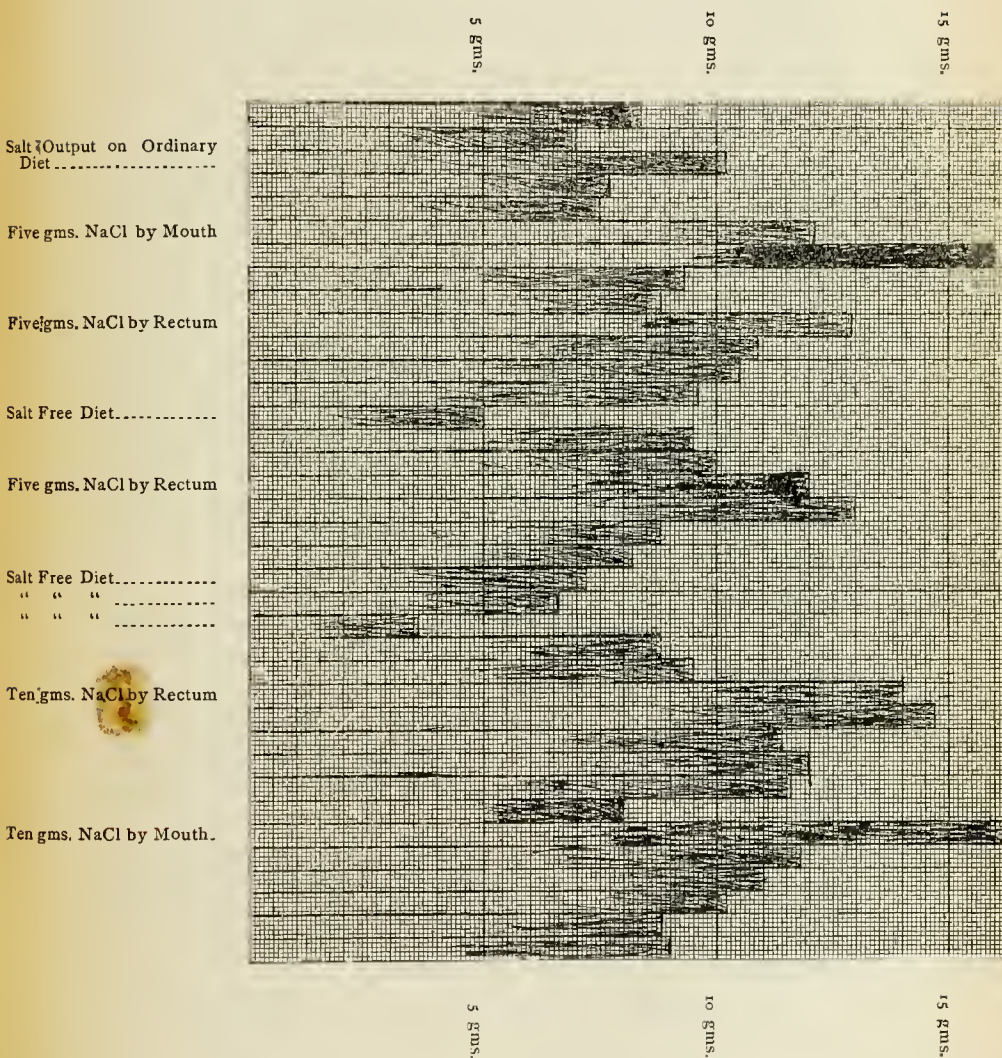
On two occasions 30 gms. of dextrose were given by rectum in twenty-four hours and the fæces examined. With Benedict's solution a trace of sugar was discovered. Whether the dextrose was completely absorbed or in part disappeared through fermentation, is not demonstrated by the method employed, as the gasses resulting were exceedingly distressing. Therefore, the drop method, as first described by Dr. J. B. Murphy (12) of Chicago, was subsequently used, and absorption occurred without any unpleasant symptoms.

With respect to the class of materials most readily absorbed, I found that the authorities are unanimous in the opinion that fat absorption is practically *nil*, so that no useful purpose

¹ The Volhard method, as modified by Samuel C. Harvey, Ph.B., was used for the determination of the chlorids in the urine.

could be accomplished by experimenting in that direction. Practically, this applies to milk containing cream.

In the case of the absorption of proteins not predigested, the authorities are at direct variance, the claim on the one



hand being that an absorption from 30 per cent. to 90 per cent. can be produced, while on the other hand such absorption is denied for reasons that must appeal to the physiologist. Utilization of proteins requires that they must first be acted upon by the digestive enzymes, and as these enzymes are not secreted to any extent in the large intestine, it is highly improbable that any appreciable amount of protein utilization can take place in the rectum.

If we could be sure that all nutrient enemas reached the small intestine, it seems reasonable to suppose that all rectal enemas containing protein material would be of considerable value. However, it seems to me if such is not the case, that proteins not predigested when injected into the rectum, simply putrefy in the large intestine and pass out as fæces.

In reference to carbohydrates, dextrose was used on account of its being *par excellence* the physiological sugar, the bulk of carbohydrate food reaching the blood as dextrose. Since this substance possesses the power of furnishing energy to the body, carbohydrates are valuable as protein spacers. Therefore, the administration of solutions of dextrose would be sufficient, without the aid of proteins, to tide us over the period required for rectal feeding.

In a case of pancreatitis, occurring in the service of Dr. William F. Verdi at the Hospital of St. Raphael, solutions of dextrose of 3 per cent., 10 per cent., and 15 per cent. were given for a period of two weeks. During that time the patient was unable to retain food taken by the mouth.

Following is a report of the analysis of the fæces kindly made for me by Professor Frank P. Underhill of Yale University.

March 29-30. During this period 3% dextrose solution used. Injection of 500 c.c. required five hours followed by rest of one hour. Stools yellow and fluid; little solid matter. Acid to litmus. Volume, 1,200 c.c. Determination made according to Allihn method.

Total amount of dextrose given in enemas:

During twenty-four hours	60 gms.
Dextrose recovered	8 gms.
Dextrose absorbed	52 gms.

March 30-31.	
Total amount given	60 gms.
Dextrose recovered	17.2 gms.
Dextrose absorbed	42.8 gms.
April 1-2. 15 per cent. sol. of dextrose.	
Total amount given	300 gms.
Dextrose recovered	156 gms.
Dextrose absorbed	144 gms.
April 2-3.	
Total amount given	300 gms.
Dextrose recovered	107 gms.
Dextrose absorbed	193 gms.
April 3-4.	
Total amount given	300 gms.
Dextrose recovered	121 gms.
Dextrose absorbed	179 gms.
April 6-7. 10 per cent. sol. of dextrose.	
Total amount given	200 gms.
Dextrose recovered	36.9 gms.
Dextrose absorbed	163.1 gms.
April 9-10. 10 per cent. sol. of dextrose in wine whey.	
Total amount given	200 gms.
Dextrose recovered	42.3 gms.
Dextrose absorbed	157.7 gms.

In no instance did alimentary glycosuria occur.

If it is true that the body at rest requires approximately 1,800 calories per day and one gram of dextrose yields about four calories, it is evident that a little over one-third the necessary amount to sustain the body at rest was daily furnished by the dextrose solutions.

Although my experiments on rectal feeding have been limited to the use of water, sodium chloride and dextrose solutions, I conclude with reasonable certainty that the rectum is capable of absorbing those substances in the form of rectal enemas; furthermore, that such substances when absorbed are helpful in nourishing the body and in supplying fluids and salts to the tissues. Therefore, it seems to me that the rectal

method of alimentation has shown itself to be a useful adjunct in sustaining the nutritive conditions of the organism under emergency circumstances, and though it may be inadequate for continued nutrition over any considerable time, it is useful in preventing the untoward effects of complete starvation during the period it must be resorted to. Enemas composed of water, sodium chloride and dextrose are rational, although at best they must only be considered as emergency measures, to be used during periods when food cannot be taken through the mouth.

REFERENCES.

- (1) Grützner: *Deutsch. Med. Woch.*, 1894 (897).
- (2) Cannon: *American Jour. Physiol.*, Vol. vi.
- (3) Voit and Bauer: *Zeitsch. of Biologie*, Vol. v, 1869 (536).
- (4) Rast: *Berlin Klin. Woch.*, 1899, xxxvi (686).
- (5) Huber: *Deut. Arch. Klin. Med.* 1891, xlvii.
- (6) Grünbaum: *British Med. Jour.*, Vol. 1, 1901.
- (7) Edsall and Miller: *Univ. Med. Mag.*, 1900.
- (8) Edsall: *Am. Jour. Med. Sciences*, 1906, cxxxii.
- (9) W. Pasteur: *London Lancet*, May 21, 1904.
- (10) Leyden: "*Die Ernährungstherapie*," Bd. 1, Al. 11.
- (11) Fleiner: "*Die Krankheiten der Verdauungs Organe*."
- (12) J. B. Murphy: *Jour. A. M. A.*, 1909 (1248).

DISCUSSION.

PROFESSOR LAFAYETTE B. MENDEL (New Haven): Observations like these emphasize the helpfulness which comes from being able to measure in some way and to get some concrete idea of the results which any therapeutic measure can accomplish. So long as one must be guided solely by vague impressions which are subjective on the part of both patient and observer, satisfactory progress is impeded. We often assign good effects to false causes. When the changes in pulse rate and blood pressure can be measured, the influence of various factors upon them can be analyzed with a considerable degree of certainty. It is only lately, however, that this element of greater certainty regarding the value of the physician's prescriptions has entered into the field of dietotherapy.

The earlier favorable impressions of rectal feeding have largely been replaced by a skeptical attitude on the part of clinicians—and properly so. Our knowledge of the physiology of the alimentary tract has been greatly extended. We know more of the equipment for digestive work

and absorption in the successive portions of the digestive tube. With the coöperation of the physiologist it ought, therefore, to be possible to introduce anew such features of rectal alimentation as are promising in principle and capable of clinical application. It is equally desirable to exclude many of the antiquated practices which have not met the test of adequate investigation. The work reported by Dr. Gompertz appears to be a step in the direction of progress.

DR. CHARLES J. FOOTE (New Haven): I think that the medical profession is to be congratulated upon the fact that there are men who will devote time to clearing up certain matters and making investigations that do not give startling results, but that are of great value to the medical profession in the treatment of disease. Such is the work of Dr. Gompertz.

There is great uncertainty as to the absorption of proteids from the rectum and the lower intestine; and Dr. Gompertz has shown that there is a very large absorption of dextrose, and also that salt is almost completely absorbed in certain solutions and that fat is not absorbed at all. A nutrient enema is a makeshift designed to meet an emergency, and cannot be continued for any length of time. It is not intended to furnish tissue proteid or to build up the body; but merely to furnish heat and energy, and to prevent retrograde metamorphosis. We can do this by using dextrose in the enema. I have used it in a considerable number of cases, and believe it to be very valuable.

On the other hand, in regard to proteids, I cannot see the advantage of using them in a nutrient enema, even when predigested; because proteid is not what we are seeking. Dextrose is absorbed rapidly, and furnishes energy; proteid is absorbed less rapidly, and does not furnish energy so quickly.

Another food element of value in a nutrient enema is alcohol, which fills very much the same place as dextrose. If the latter is too irritating, alcohol can be given with advantage. The caloric value will not be so great, because we cannot give it in such large quantities; but it will often meet an emergency.

As for the absorption of salt, we should be on our guard in certain cases. In uræmia with chronic Bright's disease, where there is dropsy, it should be used sparingly; and when used, a record of the daily amount of urine should be kept, and not more saline should be given in the enema than the quantity of urine excreted in twenty-four hours. I have seen cases in which saline was taken readily in cases of uræmia, and large quantities given; at the same time there was a small excretion of urine, so that a great deal was retained in the system. The patient becomes water-logged, in such circumstances, and develops œdema of the lungs; so we should use saline sparingly in certain cases.

PROFESSOR FRANK P. UNDERHILL (New Haven): There is not much that I wish to add to what Dr. Gompertz has already said, except that in some other cases that have come under my own notice—particularly cases of pernicious vomiting, in which nutrition by way of the mouth was prohibited—we have been very successful in giving enemata by means of the rectum, carbohydrate enemata.

In giving these enemata, the point of not expecting too much from them needs to be emphasized. Most of the physicians with whom I have talked seem to think that because you cannot supply the entire 1,800 calories, there is no use in trying to use rectal feeding. That is a mistake, as I have tried to emphasize. It is much better to take half a loaf than to take none. Under the conditions that I have worked with, the carbohydrate rectal feeding has been very successful. I have other friends, investigators, who are taking up this question, and the general report seems to be a favorable one.

DR. ALVIN E. BARBER (Bethel): May I venture to say a word? I had a case in my own family, my wife. She could retain nothing at all; and for a week or over, I kept her up, on rectal alimentation. I resorted to the use of milk, beef-juice, whiskey and quinine in these enemata. Ice, she could not retain at all. She could not retain a teaspoonful of ice water. In a few days the vomiting ceased, but the rectal alimentation was continued for a week or over. Whether the rectum received it or the lower intestines, the result we got. She recovered. This was over forty years ago, and she has had no return of the trouble since. For this reason I have great faith in rectal alimentation. As for the scientific part of it, I do not know; but the result I obtained. I lay her recovery entirely to the rectal alimentation with milk, beef-juice, whiskey, and quinine.

DR. J. FRANCIS CALEF (Middletown): I should like to say just a word. I recently had a demonstration of the possibility of entrance into the stomach of rectal enemata in a case of pernicious vomiting of pregnancy, in which the urine contains a large quantity of ammonia, a very small quantity of urea, with acetone and diacetic acid in generous amounts, but without the other symptoms of acute yellow atrophy. In this case, it happened that I was using rectal alimentation with a considerable amount of dextrose and alcohol. The patient was keeping up very well, but the large intestine became very irritable and the discharges contained much flatus. I thought that by using the Metchnikoff milk I might be able to disinfect the large intestine and improve the situation. The most important point that I wish to call attention to is the fact that within ten or twelve hours of the first injection of Metchnikoff's preparation, I found in the vomited matter

small curds of milk, very similar to that injected into the rectum several hours before, and containing the lactic acid bacillus. I believe that in these cases of the vomiting of pregnancy of the severe type, there is, more than is usually apparent in any other disease, a reversed peristalsis, which may carry rectal alimentation more readily to the stomach than in any other cases, for I am sure that a very small portion of that milk was carried up into the stomach. If my record is correct (and I can depend upon my nurse), no milk had been taken into the stomach for a great many hours before the injection, and practically nothing else.

DR. ELIAS PRATT (Torrington): I should like to ask Dr. Gompertz, in his closing words, to state whether he has made any experiment with predigested protein in connection with the dextrose?

DR. GUSTAVUS ELIOT (New Haven): There seems to be very little doubt about the value of nutrient enemata in a good many cases. A great deal has been written about it; and various mixtures have been proposed, containing milk, eggs, and different alcoholic stimulants. Of course, you have all had experience of the difficulty in some cases, in getting these enemata retained, especially when they have been continued for several days. It makes a very plausible and useful preparation to have the milk partially peptonized by the addition of bicarbonate of sodium and extract of pancreas. I have used this at times with beneficial results.

DR. LOUIS M. GOMPERTZ (New Haven): In answer to the doctor who wanted to know about predigested proteins, I would say that I have given them in days gone by, but have had no analysis of the fæces made and do not know whether they were absorbed or not.

In the case of the patient living on the old-time rectal enema of milk, water, and sodium chloride, I think it doubtful whether the milk was absorbed. Patients can live for weeks with only water by rectum; but they are in the earliest stage of starvation, as they live on the tissues themselves. As no analysis of the fæces was made in the case that the doctor speaks of, we cannot ascertain how much nutrition was furnished by the milk.

Leube has experimented with predigested foods, but says that they must be peptonized down to the finest point, in order to be absorbed at all. Pasteur of London gave enemata of warm water, with nothing else but sodium chloride, claiming that the patients did just as well as with the materials of nutrient value. The latter are obtained from the tissues themselves.

With the dextrose solutions, we are able to supply the nutrients.

Chronic Family Jaundice.¹

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In recent years considerable attention has been attracted to a remarkable disease, characterized by chronic non-obstructive jaundice with enlargement of the spleen, and usually occurring in hereditary form, or in several members of one family. In spite of a goodly number of reports from Germany, England, and especially from France, the condition has attracted little notice in this country, and no articles on the subject have appeared. That chronic family jaundice is far from rare is shown by the fact that we have been able, within a short space of time, to investigate four such families.

The first accurate account of the disease was given by Minkowski in 1900, though Murchison, fifteen years before, described a family showing hereditary jaundice, and Hayem, in 1898, reported, under the title, Chronic Infectious Splenomegalic Icterus, cases which have since been shown to belong to the condition in question. The family reported by Wilson in 1890 also belongs here, but was not thoroughly investigated.

The important features are as follows: Jaundice appears in several members of a family, frequently in two, three, or even four generations. It dates either from birth, or is first noticed during adolescence, and persists throughout life, yet in spite of the long duration, the patient experiences little inconvenience from his complaint, and may attain an advanced age. The growth of these children is not interfered with. The icterus is usually not intense, there are no signs of obstruction of the bile ducts, and symptoms of cholemia, such as itching, slow pulse, xanthomas, and multiple hemorrhages, are lacking.

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The stools are highly colored, and the urine contains urobilin, but no bile. Enlargement of the spleen, which may reach huge proportions, is almost a constant feature, while the liver is usually not at all or only slightly enlarged. As a rule, there is a moderate grade of anemia. "Bilious attacks" are extremely common, especially in youth; after an indiscretion in diet, a period of constipation, or without obvious cause, the patient feels tired and depressed, the jaundice deepens, and there is repeated vomiting of bile. Headache, diarrhœa, and slight fever are occasionally noted. After a day or two the attack passes off, to recur usually several times a year. Attacks of abdominal pain, located in the epigastrium or right hypochondrium, are met with in a large proportion of cases, and are due, as will be shown later, to a complication of gallstones. The enlarged spleen often causes a feeling of weight and pressure in the left side of the abdomen, and pain in this region, sometimes accompanied by a friction rub, is a not infrequent occurrence, owing to a complication with perisplenitis. A history of nose-bleed, particularly during adolescence, is almost always to be obtained, but hemorrhages from other organs, and especially from the stomach and intestines, are not met with, an important distinction from splenic anemia and cirrhosis. Apart from the attacks mentioned above, the subjects, as Chauffard aptly remarks, are rather jaundiced than sick. However, there is often a feeling of lassitude and a tendency to somnolence.

TYPES OF THE DISEASE. Besides the usual form in which the disease is hereditary, and others in which it is familial, in the sense that several brothers or sisters are affected while the parents are not, there is a "congenital" form, in which the disease appears in only one of a family, and dates from birth. This latter type does not differ in any way from the common form, except in the absence of heredity. Another type is the so-called "acquired" form, in which the disease appears first in childhood or adolescence, rarely later. Many of the cases are undoubtedly identical with the hereditary form, in which it not seldom happens that the jaundice is first

noticed in youth (such as our Cases V, VII, X, and XII). There is always a possibility that slight jaundice was present earlier, but escaped detection. In other cases the acquired form shows some divergences from the hereditary, especially in the severity of the anemia, which may even stimulate pernicious anemia. In the cases of Stejskal and Chauffard the red count fell below one million, but pernicious anemia could be excluded by the morphology of the red cells, and the presence of *increased* fragility of the red cells; in pernicious anemia the fragility is *decreased*. The postmortem appearances in acquired cases have been identical with those in the hereditary type, and for the present it is permissible to conclude that the acquired and the hereditary form are only different manifestations of the same disease, just as we see in other diseases which are usually hereditary (such as progressive muscular dystrophy) cases which are apparently "acquired."

THE JAUNDICE. In well-marked instances the conjunctivæ are a lemon-yellow color, and the skin of the body is distinctly yellow, while the face is of a peculiar buff color which is quite characteristic. The greenish or blackish tint seen in long-standing total obstruction of the bile ducts is never present. In light cases the yellowness is apparent only on careful scrutiny. The jaundice varies in intensity from time to time, being more marked in some patients during the cold weather, in others in the summer. Fatigue and sometimes emotion may cause an increase in the jaundice, and at such times the patients, as a rule, complain of lassitude and depression. Intercurrent diseases, and even taking cold, may cause an increase. Once present, the jaundice persists throughout life. An apparent exception to this rule is seen in Plehn's first case, who was very yellow as a child, but never later, and at sixty-one showed only anemia and enlarged spleen. (No examination of the serum for bile was made.) Poynton and a few others have observed recurrent attacks of jaundice with only anemia and splenic tumor in the intervals. As the blood serum was not examined for bile, it may be questioned if a slight degree of icterus in the interval did not escape detection.

THE URINE. The urine is almost always high colored. Urobilin is present in the great majority of cases, being missed chiefly in those of slight intensity. Urobilinogen is also almost always to be found. On the other hand, bile is absent from the urine almost invariably, and when found is usually in small quantities and as a transitory phenomenon. The twenty-four hour amount is normal. There is frequently a deposit of urates, and sometimes of uric acid; in one of our cases (VII) showing such a deposit, the total endogenous uric acid was increased. We have found the normal urinary pigment (urochrome) constantly increased, and this accounts in large measure for the reddish-yellow color of the urine, which is present even in cases showing no urobilin. Hematoporphyrin is always absent.

THE STOOLS. In all reported cases the feces have been well-colored, and in those that we have examined they have seemed to contain an excess of pigment, judging from the intense orange or brown color. A marked reaction for urobilin is obtained with corrosive sublimate, and an intense fluorescence with Schlesinger's test for urobilin. These facts, together with the urobilinuria, point to an increased secretion of bile into the intestine, and Möller has, in fact, shown by quantitative methods that the total urobilin excretion in the urine and feces is considerably increased (400 milligrams in twenty-four hours). Unaltered bilirubin is absent or present only in traces. The guaiac test for occult blood has been uniformly negative in our cases. The feces show no excess of fat, starch, or muscle fibers, and quantitative analysis in one of our cases (VII) showed normal proportions of neutral fat, fatty acids, and soaps, as was to be expected. Constipation is often present, but not with regularity, several of our patients passing two or three soft stools daily.

THE BLOOD. The serum always shows the presence of bile pigment, but not of urobilin. The important feature, which gives our chief clue to the nature of the disease, is the decreased resistance of the red cells to hemolyzing agents, or as it is sometimes called, the increased fragility. This was first

discovered by Chauffard, and has been present, with very few exceptions, in all the cases in which it was looked for. The usual method of testing for it is by mixing the red blood cells, preferably after separation from the plasma, with hypotonic solutions of sodium chloride of varying strengths, and noting the point at which hemolysis takes place. With normal blood hemolysis begins in salt solutions of 0.44 per cent., and is complete at 0.36 per cent. In the case of chronic family jaundice, however, hemolysis begins at 0.6 per cent., or even 0.7, and may be complete at 0.5 per cent. This marked decrease of resistance is all the more important, because in chronic obstructive jaundice the resistance is normal or *increased*. As Chauffard has shown, this lessened resistance is evident also when tested with other hemolytic agents, such as eel serum and antihuman serum. Hemolysins, however, have never been found in the blood serum, though often looked for, and hemagglutinins have been found in only one case (Hawkins and Dudgeon). Hemoglobin has been found in the blood serum in only two cases, those of Bettmann and Chauffard. Bettmann's patient frequently had attacks of prostration with increased jaundice after exposure to cold. The author was able to induce such an attack artificially by means of immersion of the hands in ice water, and then found large amounts of hemoglobin in the serum and later in the urine. In Chauffard's case oxyhemoglobin was found in the serum during a routine examination. Such phenomena are probably quite exceptional in chronic family jaundice, but are interesting in connection with the hemolytic theory of its causation. They do not prove any close relationship to paroxysmal hemoglobinemia.

A moderate anemia is the rule, with red counts usually in the neighborhood of three or four millions. The lowest count in the hereditary type was 1,500,000 (Benjamin and Sluka), while occasionally normal figures are reported, and in two cases abnormally high counts (Mosse, 7,800,000; Guinon, Rist, and Simon, 7,200,000). In Mosse's case, however, the jaundice was acquired at the late age of fifty-four years, so

that it may be doubted if it belongs with the disease under consideration. It differed from the ordinary type of polycythemia by the lack of cyanosis and the presence of acholuric jaundice. In the other case, also acquired, the polyglobulia was transient and accompanied by cyanosis.

The color index is usually normal, the hemoglobin being reduced in proportion to the red count. The red cells are usually well colored. There is well-marked anisocytosis, with microcytes predominating. When measurements have been made, the average diameter has been found decreased. Thus out of six cases in which we measured the cells, the diameter was decreased in five, averaging 6.5 microns, and normal in one. Usually there is little poikilocytosis, and some polychromatophilia, but punctate basophilia is rare. Reticulation of the red cells, as brought out by the so-called "vital" method of staining, is apparently a constant feature, and is considered by Chauffard an important diagnostic sign if present in a considerable proportion of the cells. Nucleated red cells in small numbers are often found, usually in the form of normoblasts. In two of our cases there were isolated megaloblasts, of the intermediate variety; that is, with small deeply staining nucleus. The blood plates are present in normal numbers. The leucocyte count is usually within normal limits, sometimes subnormal and exceptionally increased. The differential count shows nothing striking except for a tendency toward high values for the polynuclear neutrophiles, and the occasional presence of rare myelocytes. The blood picture differs from that of the ordinary secondary anemia in the normal color index and the more frequent appearance of nucleated red cells.

THE LIVER. The liver is usually of normal size, or slightly enlarged, seldom reaching more than one finger's breadth below the edge of the ribs. Some have noted that during exacerbations of the jaundice the liver swells, to return to its former size after the attack is over. Signs of cirrhosis, such as hardness, irregularity, or marked alteration in size of the liver, ascites, and evidences of collateral circulation, are conspicuous by their absence. The bile, in the only case in

which it was examined (our Case VII) was of a deep golden-red color, evidently very rich in pigment, and was sterile.

Attacks of abdominal pain resembling biliary colic have been observed in a large proportion of cases, and have been often supposed to be caused, in some mysterious way, by the disease itself. In two of our cases (VII and IX), however, gallstones were removed at operation, after which the attacks ceased, and in both our autopsies (Cases I and II) stones were found in the gall-bladder, so that we have no hesitation in declaring that these attacks are due to gallstones. A striking feature is the frequent onset of the colic at the time of puberty, a period at which ordinary cholelithiasis is seldom met with. The pain is sometimes located in the region of the spleen, and is then due to perisplenitis, for friction rubs have been heard over the spleen and inflammatory changes in the capsule have been found at autopsy. The pain of perisplenitis, however, is different from that of gallstone colic, being usually dull and not paroxysmal.

THE SPLEEN. The presence of splenic tumor forms one of the most striking features of the disease, and has often led to the false diagnosis of splenic anemia. It is practically always palpable, in well-marked cases extending down to the level of the navel, and occasionally reaching the proportions of a leukemic spleen, as in our Case VIII, in which it filled the entire left side of the abdomen. In a few instances no enlargement of the spleen was found, though all the other characteristics of the disease were present. In Case III of Benjamin and Sluka, the grandfather showed no splenic enlargement, while the son and granddaughter both were typical cases with very large spleens. There is, therefore, no reason to make a separate category out of the cases without splenic tumor.

THE HEART. This organ shows no abnormalities, except for a soft systolic murmur in the pulmonary area, due to the anemia.

THE METABOLISM. Tests for alimentary glycosuria and levulosuria have been almost constantly negative. In our

Case VII, however, a moderate excretion of sugar was noted after the ingestion of glucose, and also after levulose; it was not determined in the latter instance whether the sugar excreted was dextrose or levulose. In this same case normal values were found by one of us (Tileston) for creatin, creatinin, urea, and ammonia; the patient was on a creatin-free diet.

COMPLICATIONS. True gout has been associated in a few instances, notably in the family described by Murchison, and in our Cases I, IV, and XI. Articular pains, usually without joint changes, are somewhat frequently reported, and great importance has been attached to them by French observers, who make them a part of the "hepatic diathesis" ("hépatisme" of Glénard). They are not a constant feature by any means, and in our opinion have no important bearing on the disease. The various forms of chronic arthritis and arthralgia, particularly in elderly persons, are so common that it is easy to get a history of them in some members of almost any family. Urticaria is not uncommon. The complication with gallstones has already been discussed.

PATHOLOGY. Only eight autopsies have been performed, in the cases of Minkowski, Vaquez, Gandy and Brulé, Oettinger, Strauss, Wilson, and our Cases I and II. The cases of Strauss and Oettinger were acquired, the others hereditary; the pathological picture was the same in both types. The liver has been found normal in size, with no obstruction of the bile ducts, and no cirrhotic changes. Evidences of cholangitis have been lacking, except in our Case II, in which there were dilatation and thickening of the common duct, evidently secondary to gallstone disease. In all cases there was a considerable deposit of brownish pigment within the liver cells; this pigment contained iron in Vaquez's case, in Minkowski's it did not. In five of the eight cases stones were found in the gall-bladder. The spleen is greatly enlarged (up to 1000 grams), and usually shows signs of old perisplenitis; the increase in size is due mainly to increase of the pulp, the trabeculæ being, as a rule, not much enlarged, and the follicles normal, or, as

in the case of Wilson, sclerosed. Microscopically the striking feature is the marked engorgement with blood; this in one-half of the cases was most marked in the pulp, the sinuses containing little blood. There is more or less pigment in the organ, usually within endothelial cells. The amyloidosis found in our Case I was probably to be attributed not to the disease itself, but to the complication with gout. The kidneys in Minkowski's case contained a very large amount of iron, both as pigment and in combination with an albuminous body; in the other cases there was little pigment in the kidneys. The bone marrow is found in a state of intense reaction; there is red marrow in the femur and numerous normoblasts, myelocytes, and polynuclear cells are seen.

HEREDITY. The disease is in most instances an exquisitely hereditary affection, frequently involving three or even four generations. It is transmitted equally by the male and by the female, and Wilson's statement that it is usually transmitted from father to daughter, and from mother to son, does not hold good for most instances. There are families in the literature in which only females are affected, and others in which the males are the ones to show jaundice. In a large series, however, the sexes are involved about equally (55 males and 45 females in 100 cases). There seems to be no racial predisposition. Some of the children almost always escape, and the offspring of those who do are always free from the disease.

ETIOLOGY AND PATHOGENESIS. Varied theories have been propounded to account for this strange disease. Two may be dismissed from the start—the second theory of Pick, of a congenital communication between the bile passages and the lymphatics, and Hayem's latest view, that it is due to syphilis. The former is disproved by the autopsies, the latter by the entire lack of proof of the existence of syphilis in these families, and by negative Wassermann reactions in the four cases of Weber and Dörner.

The icterus present is certainly of the type known as polycholic, or, perhaps more correctly, pleiochromatic. That is to

say, it is due to an excess of biliary pigment, not to obstruction of the bile ducts. This is shown by the fact that the stools are well colored, and the total urobilin output increased, as shown by Möller, and by the absence of any obstruction of the bile ducts, small or large. The presence of *temporary* obstruction of the bile ducts must be admitted for a few cases, in which with increased jaundice and usually colicky pains in the abdomen the stools became clay-colored, but these exceptions are readily explained by a complication with gallstones, which is common.

Let us next consider the first theory of Hayem, that the icterus and splenic enlargement are due to a chronic cholangitis. This view has very little in its favor, for it is difficult to conceive of a chronic infection of the bile-passages sufficient to produce jaundice dating from birth, and persisting through many years, and yet leaving no traces visible at the post-mortem examination.

Minkowski believes that the disease is due to a congenital perverted function of the liver cells, by virtue of which the bile is secreted in part into the lymphatics instead of into the bile capillaries. Under normal circumstances the liver cells secrete sugar into the lymphatics and blood vessels, and bile into the bile passages. It is easy to conceive that this selective action might be interfered with, so that part of the bile would go the wrong way. This hypothesis would account for the jaundice, but not for the excess of bile pigment, nor for the enlargement of the spleen. Moreover, the jaundice may be explained solely on the ground of pleiochromia, for it has been shown that an excess of bile pigment is accompanied by increased viscosity of the bile, which raises the pressure in the bile passages and thus produces in a sense a mechanical obstruction to the flow of bile, and consequently jaundice.

The discovery by Chauffard of the increased fragility of the red cells threw a new light on the disease, and apparently explained the various phenomena in a satisfactory way. The red cells, being unduly susceptible to the action of hemolyzing

agents, are readily destroyed, and this leads to the anemia which is so constant a feature. The bone-marrow is stimulated by the deficiency in red cells to increased activity, shown in the circulating blood by the presence of nucleated red cells and at times an increased proportion of polynuclear leucocytes, and a few myelocytes. The increased destruction of red cells leads to an increase in the material (free hemoglobin) out of which bile pigment is made, and hence to pleiochromia and icterus. Such a "hemolytic icterus" can be produced experimentally, as Lesné and Ravaut and others have shown, by the injection of hemolytic agents, which is followed by jaundice, increase in size of the spleen, and, depending upon the size of the dose, by the appearance of urobilin, bile, or hemoglobin in the urine.

Since no hemolysins can be demonstrated in the blood, the increased destruction of red cells probably takes place not in the blood, but in the spleen, that "graveyard of the red corpuscles." This leads to increased work on the part of the spleen, and hence to the progressive enlargement of the organ.

This hemolytic theory offers the best explanation of the phenomena observed, and is the one generally accepted by recent writers. The ultimate cause of the increased fragility of the red cells remains to be discovered. Two hypotheses are possible: (1) That there is a congenital defect of metabolism leading to the production of toxic substances deleterious to the red cells; and (2) that there is a congenital defect in the blood-forming organs.

TERMINOLOGY. As often happens in diseases of obscure causation, a multitude of names has been proposed, depending on the theory of the writer with regard to etiology, and whether the hereditary, the familial, or the congenital aspect is emphasized. For example: Chronic infectious splenomegalic icterus, chronic acholuric hereditary jaundice, congenital hemolytic icterus, chronic family cholemia, etc. Until more is known about the pathogenesis, the term chronic family jaundice may be recommended on the ground of simplicity and clearness.

OTHER FAMILIAL DISEASES ASSOCIATED WITH JAUNDICE OR WITH SPLENIC TUMOR. There are a few other affections which may occur in several members of a family, and show more or less resemblance to chronic family jaundice.

1. *Congenital Obliteration of the Bile Ducts.* This process, due either to congenital malformation or to inflammatory changes, leads to intense obstructive jaundice, visible at birth. It is incompatible with the long continuance of life. In some cases, however, there is only stenosis of the common duct, and the patient may live many years, with jaundice and partial decolorization of the stools; the gall-bladder is greatly dilated, from which fact and the time of appearance of the icterus the diagnosis can be made.

2. *Fatal Icterus Neonatorum without Obstruction of the Bile Ducts.* Very rarely families are met with in which almost all of the children, and they are many, become deeply jaundiced a few days after birth, and usually die within a period of days or weeks, often with convulsions. Bile is found in the urine, but the stools are well colored. Those infants which do not die early recover from the jaundice completely, but are very anemic for a while afterward. At autopsy nothing has been found to account for the jaundice; in particular there has been no obstruction of the bile passages, and no evidence of septic processes or syphilis. A curious feature is the "Kernicterus" of Schmorl; the ganglia at the base of the brain are an intense yellow, while the rest of the brain is only slightly icteric; the yellow areas show necrosis of the nerve cells. This type of icterus is peculiar to jaundice of the newborn, and has been reported chiefly in connection with the family type.

3. *Juvenile Family Cirrhosis.* Cirrhosis occurring in two or more children of a family has been described by a number of writers. A few of these cases may be attributed to hereditary syphilis, some others to the use of alcohol or other irritating substances; thus, the two children reported by Jollye (*Brit. Med. Jour.*, 1892, i, 858) both drank vinegar in large

quantities. For the majority, no cause could be made out. The course resembles that of Hanot's cirrhosis, ending fatally before the twentieth year. The growth is usually stunted.

4. *Familial Splenomegaly of the Gaucher Type*. This truly remarkable disease, first described by Gaucher in 1882, is characterized by enormous enlargement of the spleen (up to 7000 grams) lasting over many years, usually occurring in several members of a family, and affecting females almost exclusively. The liver is always considerably enlarged. Anemia is seen, and brown pigmentation of the skin, but jaundice is seldom, and ascites never, present. The histological appearances are pathognomonic. The spleen, bone-marrow, lymph nodes, and in the liver the ramifications of Glisson's capsule show large numbers of peculiar cells, with small nuclei and much protoplasm. Marchand has recently shown that the large size of the cells is due to a deposit of a homogeneous material like hyaline, the nature of which could not be determined.

DIAGNOSIS. Chronic family jaundice is easily recognized, if the disease is only borne in mind. The great enlargement of the spleen with anemia has led to the false diagnosis of splenic anemia, or Banti's disease; the latter diagnosis was made in our Case XII by a well known European clinician. The occurrence of jaundice in other members of the family, the chronicity, the early onset, the presence of bile in the feces and its absence from the urine, the changes in the blood, and the enlargement of the spleen without enlargement of the liver or indications of cirrhosis, are the important diagnostic points. From juvenile cirrhosis it is distinguished by the absence of marked enlargement of the liver, the absence of stunting of the growth, the absence of bile in the urine, and the course of the disease. Splenomegaly of the Gaucher type may be excluded by the presence of jaundice, the absence of marked enlargement of the liver, and by the fact that Gaucher's disease is familial but not hereditary. The acquired form of chronic family jaundice is distinguished from pernicious anemia by the increased fragility of the red cells in the former, and by

the morphology of the blood. The frequent complication with gallstones has led to the diagnosis of jaundice due to obstruction of the common duct by calculi. This error can be avoided by attention to the above mentioned points.

PROGNOSIS. The prognosis is good so far as life is concerned, absolutely bad with regard to recovery. The prospects are good that some of the offspring will be free from jaundice.

TREATMENT. No measures have any effect on the jaundice or splenic tumor, not even the Röntgen rays. The anemia is said to have been benefited in certain cases by the use of iron, while arsenic is useless. The most that can be done is to regulate the life of the patient in such a way as to avoid the factors that tend to increase the symptoms (fatigue, excitement, indiscretions of diet, etc.). It should be realized that attacks of abdominal pain are not due to the disease *per se*, but to a complication with gallstones, and the patient should be given the benefit of modern surgical treatment, which has been neglected heretofore in all cases except VII and IX of our series.

In concluding we present the reports of thirteen cases, occurring in four families. The first of these families was investigated by Dr. Griffin, the others by Dr. Tileston. To economize space, many details have been omitted. In the urine sugar was always absent, and also acetone and diacetic acid. Urochrome was increased in all but Case XI. Albumin was absent unless otherwise specified.

Family I. Jaundice in at least seven members in three generations. Autopsies in two cases.

This family is remarkable for the frequency with which the condition has been associated with gallstone colic (five out of seven cases), and with gout.

CASE I. O. S., male. Concerning his parents little is known, but a cousin of his father was jaundiced for many years, and suffered from severe attacks of colic. O. S. was the third of thirteen children, ten of whom lived to grow up. One brother (H. S. S., Case II) had the same disease, and a sister was jaundiced all her life, and suffered from gallstones.

O. S. was jaundiced from birth, suffered frequently from attacks of biliary colic, and died at the age of seventy-four. Of his four children, the first two were jaundiced (Cases III and IV).

Autopsy, May 22, 1900, Harvard Medical School, U—00—15, performed by Dr. F. T. Fulton, to whom we are indebted for the notes. There are extensive gouty lesions, consisting of marked deformity of the fingers and toes, with many sodium urate deposits (tophi) in the vicinity of these joints, and in the kidneys. The *spleen* is much enlarged, and firm; the capsule is thickened, with fibrous tags adherent. On section the trabeculæ are prominent, the follicles not easily made out, the pulp not increased. The *liver* is not enlarged, of normal consistency, and on section brownish red. The *gall-bladder* is considerably distended with dark green bile, and contains 13 pigmented calculi. The bile passages are normal. There are old adhesions between the gall-bladder and the foramen of Winslow. The *kidneys* are small, granular, the capsule adherent, the cortex thinned, the pelvis dilated. The left kidney contains some cysts and a small abscess. There are also hypertrophy of the prostate, arteriosclerosis, hypertrophy and dilatation of the heart, and acute pericarditis.

Microscopic Examination of the Spleen. In frozen sections treated with iodine the walls of many of the smaller vessels, and certain areas closely surrounding these vessels, are stained a mahogany-brown. Sections stained in the usual way show considerable congestion, and a general increase of the interstitial connective tissue. The pulp consists of lymphocytes and red blood cells. Throughout the pulp there is considerable golden-yellow pigment, chiefly within endothelial cells. The lymphoid cells of the follicles have almost entirely disappeared, their place being taken by small pinkish masses of hyaline material (amyloid); the walls of the smaller arteries are distinctly thickened and hyaline. "The pigment is probably derived from red blood corpuscles" (F. B. Mallory).

Microscopic Examination of the Liver. Frozen sections show no excess of fat. With iodine the walls of the smaller

interlobular vessels, and small scattered areas among the liver cells, give the reaction for amyloid. There is no increase of the interstitial connective tissue, and the bile capillaries are normal. There is considerable brownish pigment within the liver cells. In minute areas the liver cells are entirely gone, their place being occupied by masses of amyloid.

Microscopic Examination of the Kidneys. There is a marked chronic diffuse nephritis with extensive amyloid infiltration; also an acute inflammatory process in the collecting tubules. (Ascending infection.) No pigment is seen.

CASE II. H. S. S., brother of O. S. (Case I). When first seen in July, 1903, for bronchitis, he was seventy years old. He said he had been slightly jaundiced all his life. Examination showed icterus of the skin and eyes, great enlargement of the spleen, which reached from the sixth space to the level of the navel, and a liver of normal size; myocardial insufficiency. January 4, 1904, he was seen again for a severe attack of pain in the right hypochondrium, with tenderness over the region of the gall-bladder, fever, and leucocytosis. The stools were dark colored and the urine free from bile, while the skin was more yellow than usual. The spleen had not changed in size. This attack of cholecystitis lasted, with intermissions, for six weeks. On February 8, 1907, he was seized with his final illness, a lobar pneumonia, to which he succumbed on the 19th. An autopsy was performed by Dr. L. J. Rhea, of the Department of Pathology of the Harvard Medical School, who has very kindly placed the notes at our disposal.

Autopsy U—07—18. February 19, 1907, by Dr. L. J. Rhea. The scleræ and skin have a distinctly yellowish tint. *The spleen* is markedly increased in size, and is united by firm adhesions to the diaphragm. The consistency is somewhat increased. On section it is deep red in color; the follicles are easily made out, the trabeculæ are just visible. *The liver* is apparently not larger than normal, the cut surface dark brownish red. The bile ducts stand out rather prominently. The common duct is patent. There are dense adhesions between the gall-bladder and the duodenum. The walls of the gall-

bladder are thickened, and its cavity filled by a large black calculus. No stones are in the common duct or in the bile ducts within the liver. The common duct is quite markedly dilated and its walls thickened. There are also resolving pneumonia, chronic myocarditis, generalized arteriosclerosis, mural thrombi in the heart, chronic adhesive pleurisy, chronic nephritis and persistent thymus gland.

Microscopic Examination. *Spleen:* The capsule is considerably thickened by dense fibrous tissue. The organ contains a large amount of blood, which is in the pulp, not in the sinuses. The latter are narrow and appear compressed. Scattered throughout the organ are a few endothelial cells containing brownish pigment; some of the endothelial cells lining the sinuses, and in the capsule, contain similar pigment. *Liver:* There is a *slight* increase in the connective tissue between the columns of liver cells. The latter show quite a large amount of pigment in the form of fine scattered granules. The bile ducts are everywhere patent and their walls are not thickened. The sinusoids are moderately distended with blood and show some increase in lymphocytes, and a good many endothelial cells, which are phagocytic to red blood corpuscles, and polynuclear leucocytes. *Kidney:* There is a sclerotic process involving small localized areas. Scattered tubules show numerous small brownish pigment granules within the epithelial cells.

CASE III. H. B. S., aged fifty-five years, son of O. S. (Case I). First child. He has been jaundiced since birth, but the color now is less intense than formerly, having faded in the last twenty years. "Slow fever" (probably typhoid) in youth. Until he was forty he was subject to frequent attacks of gallstone colic so severe that operation was asked for, but refused by the surgeon on account of the long-continued jaundice. He has bled profusely from the left nostril at times, but does not bleed much after cuts. Feces and urine have been always dark. He has been troubled for a long time by rheumatic pains, with some deformity of the smaller joints.

Physical Examination, February, 1910. The skin has a yellowish tinge, evident on close inspection; the conjunctivæ are more deeply yellow. The liver is slightly enlarged to percussion and the edge is palpable on deep inspiration about two fingers' breadths below the costal margin. The spleen is enlarged to percussion and palpable at the edge of the ribs with deep breathing. *Urine*: High-colored, with deposit of urates. Bile pigment and urobilin both absent. *Blood*: Leucocytes, 13,200; moderate poikilocytosis, slight polychromatophilia. Differential count: Polynuclear neutrophiles, 80 per cent.; small lymphocytes, 13 per cent.; large lymphocytes, 7 per cent.; eosinophiles, 0 per cent. No nucleated red cells. The *serum* contains bile pigment (iodine test).

R. S., the son of this patient, aged twenty-six years, has never been deeply jaundiced, though the color of his skin has always been dark. He has been subject "all his life" to attacks of vomiting, with pain in the epigastrium, sometimes in the right hypochondrium. Appendectomy done three years ago has had no influence on the attacks. Stools always colored so far as known. Examination shows nothing abnormal except a slight icteroid tint of skin and conjunctivæ. No enlargement of the liver or spleen could be made out. This case is probably one of chronic family jaundice, but in the absence of splenic enlargement and definite jaundice the diagnosis is not certain.

CASE IV. O. A. S., aged fifty-one years. Brother of H. B. S. (Case III) and son of O. S. (Case I). Second child. He probably has been slightly jaundiced all his life, though he did not notice it until adolescence. The yellow color has never been marked, but is slightly greater during digestive upsets. Stools always brown. He has a tendency to indigestion, but there are no attacks of vomiting or abdominal pain. "Slow fever" as a boy, pneumonia at twenty-nine. During the past twenty-five years several typical attacks of pain in the great toe (gout).

Physical Examination, February, 1910. Well developed and nourished. Skin sallow, conjunctivæ slightly yellow. *Spleen*:

Enlarged, from the sixth space to three fingers' breadths below costal margin. *Liver*: Not enlarged. No topi.

CASE V. M.S., aged twenty-three years. Daughter of O. A. S. (Case IV). Though always subject to "bilious" attacks with vomiting, she was never jaundiced till eight years ago, when, after typhoid fever she began to have attacks of pain in the region of the liver, with subsequent passages of gallstones. The stools have been searched for gallstones, and about 200 have been recovered, none larger than a grape-seed. Stools always brown, urine sometimes high colored.

Physical Examination, February, 1910. Rather slightly built, but appears healthy. Skin and conjunctivæ slightly yellow. The *spleen* reaches from the seventh rib to the costal margin, where it is palpable. *Urine*: Bile pigment and urobilin absent. *Blood*: Red cells, 2,084,000; leucocytes, 5,800. No nucleated red cells. Slight anisocytosis and poikilocytosis. Differential count normal.

CASE VI. M. S., aged twenty-two years. Son of H. H. S. (Case II). Fifth child. He was born jaundiced, and has remained so ever since. Usually moderate, the yellow color at times becomes very conspicuous, and then he does not feel so well. Since the age of fourteen he has had "bilious" attacks about twice a year, with nausea, vomiting, diarrhœa, anorexia, and fever (up to 101.4°). Duration one or two days. *Never colic*. *Nose-bleed* frequently. The stools have always been dark, the urine high-colored. The bowels move usually twice a day. The patient has been under observation since 1903, during which time there has been little variation in the condition, except that the jaundice has decreased somewhat; the size of the spleen has remained unaltered.

Physical Examination, January 23, 1910. Tall, active, slender youth (six feet two and one-half inches), weighing one hundred and sixty-eight pounds in clothes. Slight jaundice of the skin and conjunctivæ. *Spleen*: From the seventh space to level of navel, 17 cm., hard, rounded. *Liver* not enlarged to percussion, edge just palpable on deep inspiration. Heart not enlarged, systolic murmur in pulmonary area. *Urine*:

Bile absent, urobilin sometimes present in traces, sometimes absent, urobilinogen in traces, urochrome abundant. Indican increased. *Feces*: Dark brown, urobilin present. Microscopically normal. *Blood*: Red cells, 4,144,000; leucocytes, 5000 and 9000; differential count normal. No nucleated red cells.

Family II. Chronic jaundice in brother, sister, and first cousin once removed.

CASE VII. We owe the chance to study this patient to the kindness of Dr. C. Allen Porter. W. B. W., Mass. General Hospital, No. 162,879. Aged thirty-nine years, married, no children. *Family history*: Mother died of "cirrhosis of the liver, never jaundiced" (probably chronic family jaundice). A first cousin of mother, now forty-one years old, has been icteric since childhood. A sister of the patient, ten years older than he, was jaundiced as far back as he can remember, and had attacks of colic; she died at twenty-one years, of pneumonia. A brother, now fifty years old, has at times yellowness of the eyes, never of the skin. *Past history*: At the age of fourteen the patient noticed a yellow color of his skin, which has persisted ever since, with variations. Attacks of pain in the epigastrium with vomiting began when he was fifteen, and became more frequent and severe as he got older. In 1892 cholecystotomy and removal of 483 gallstones. The spleen was found enlarged at this time. Two later operations to close biliary fistula. Fourth operation in 1905, with removal of many small pigmented calculi. Since then, no further attacks of colic. The patient had bleeding hemorrhoids in boyhood, and *nose-bleed* rather frequently, especially five years ago. There has been an ill-defined pain in the right shoulder ever since the last operation. Present illness, March, 1909: Has had a continual ache in the region of the spleen for several months, and feels tired and miserable. Appetite good, bowels inclined to be costive. Has had itching at times, but only of the hands and feet. A fifth operation was performed March 23, 1909, by Dr. C. A. Porter, for the cure of a hernia in the scar of the old wound, and for exploration of the biliary

system. The gall-bladder was incised and contained no calculi; no obstruction of the bile ducts could be found.

Physical Examination. Well developed and nourished, considerable pallor. Face a peculiar buff color; the rest of the skin distinctly yellow, conjunctivæ more so. Heart slightly enlarged to left, soft systolic murmur in pulmonary area. Systolic blood pressure, 130. *Liver:* Not enlarged nor palpable. *Spleen:* Much enlarged, hard, smooth, not tender; the long axis very obliquely placed, measures 22 cm. The spleen extends from the seventh rib to the level of the umbilicus, and nearly to the middle line. *Blood:* The serum was reddish yellow and gave a strong reaction for bile. The resistance of the red corpuscles was very kindly tested for us by Dr. F. P. Gay, and a decidedly increased fragility was found. The figures for the hemolysis were as follows: 0.4 per cent. salt solution, 100 per cent.; 0.45 per cent. solution, 60 per cent.; 0.5 per cent. solution, 20 per cent.; 0.6 per cent. solution, 15 per cent.; 0.7 per cent. solution, 10 per cent. Normal blood gives little or no hemolysis with 0.5 per cent. salt solution.² There was moderate anemia, with red counts ranging from 4,400,000 to 4,116,000; hemoglobin, 80 per cent. (Sahli); color index, I. White counts, 7200 and 8100. Differential count normal. Polychromatophilia and anisocytosis present. Most of the smears showed a few normoblasts, and once an "intermediate" megaloblast was found.

Urine. The urine was frequently examined, and was always of a high reddish yellow color. Urobilin was constantly present and bile pigment absent. The twenty-four-hour amount normal. Indican increased once, normal at other times. A uric acid deposit was often observed.

Feccs. Usually one or two stools a day of a rich orange color, formed, soft, time of passage nineteen hours. Strong reaction for urobilin. During a period when Blaud's pills were being taken, the stools were a deep olive-green color. This disappeared as soon as iron was discontinued, and was probably due to oxidation of bilirubin to biliverdin by the iron.

² For the method, see Gay, Jour. Med. Research, 1907, xvii, 321.

A single stool, when patient was on a purin-free diet, showed a water content of 87 per cent. and normal proportions of neutral fat, fatty acids, and soaps. (Total fat, 29 per cent. of dried stool; of this, there was 38 per cent. neutral fat, 26 per cent. fatty acids, 36 per cent. soaps.)

Stomach Examination. No fasting contents. After Ewald breakfast hyp acidity (free HCl, 0.01 per cent.; total acidity, 0.03 per cent.).

Bile. Some of the bile was obtained aseptically at the operation, and examined. Cultures, both aërobic and anaërobic, made by Dr. Oscar Richardson, proved sterile. The bile was transparent, and of a deep golden-red color, evidently due to an abundance of bile pigment. Reaction neutral. No macroscopic mucus. Mucin present by acetic acid test. Bilirubin and bile acids present, albumin absent. Sediment negative.

Metabolism. In view of the present interest in creatinin, it was thought desirable to determine the amount of this substance. The patient was put on a creatin-free and purin-free diet, and after a preliminary period of three days, the urine was collected. The methods employed were, for the total nitrogen, the Kjeldahl method; for ammonia, urea, creatin, creatinin, the Folin methods; for uric acid, the Folin-Schaffer method. The determinations were made in duplicate. We are greatly obliged to Professor O. Folin for the use of his laboratory and for advice. The figures obtained are shown in the following table:

Date.	Total N. Grams.	NH ₃ as N. Grams.	Urea as N. Grams.	Uric Acid. Grams.	Creatin. Grams.	Creatinin. Grams.	Creatinin. Milligrams per kilo body weight.
April 16-17	10.81	0.60	8.63	....	0.066	1.364	21
April 17-18	10.07	0.51	8.12	....	0.046	1.304	20
April 18-19	9.65	0.61	7.71	....	0.061	1.208	19
July 8-9	13.13	....	....	0.785	0.000	1.374	20

The values obtained for creatinin and urea are normal, those for ammonia are somewhat high, and the endogenous uric acid is distinctly increased. In the first period the uric acid could not be quantitated because part of the uric acid was precipitated spontaneously.

Family III. Four members affected in three generations.

For the opportunity to study this family we are greatly indebted to Dr. W. H. Smith, of Boston.

CASE VIII. J. N., aged fifty-five years, of Irish descent, only child. *Family history*: His mother was the color of saffron as long as he can remember, twenty years or more. Her three sisters were all free from jaundice. The patient has had five children; the first was a girl and escaped the disease; the second (Case IX) and third (Case X) are both yellow; the fourth, male, died at the age of seventeen months, unaffected; the fifth, also male, was born jaundiced, and died when five days old. *Personal history*: He has been jaundiced since boyhood. The color is sometimes an intense lemon-yellow, but usually only moderate. It increases after fatigue and "catching cold," but exposure to cold does not affect it. The urine has always been high-colored and the stools brown. Nose-bleed during adolescence, never "bilious attacks," or itching. He often has a tired feeling, and a tendency to sleep a great deal, but his general health is better now than when he was younger. Four years ago he had an attack of tremendous pain in the epigastrium lasting several hours (gallstone colic). There was several similar attacks that year, none since.

Physical Examination, March 1910. Small man, height, five feet four inches; weight, one hundred and eight pounds; skin and conjunctivæ of a light yellow color; acne of face. Heart not enlarged, soft systolic murmur in pulmonary area, systolic cardio-respiratory murmur at base, venous hum in neck. Pulse, 76. *Spleen*: Greatly enlarged, reaching from the eighth rib to the level of the anterior superior spine of the ilium, and to the middle line, so that it fills the left half of the abdomen. The surface is hard, smooth, not tender. *Liver*: Not enlarged nor palpable. *Blood*: Red cells, 3,608,000. Hemoglobin, 70 per

cent. (Sahli). Color index, 1. Leucocytes, 6000. Differential count: Polynuclear neutrophils, 77.25 per cent.; lymphocytes, 19.75 per cent.; mononuclears and transitionals, 2.25 per cent.; eosinophiles, 0.5 per cent.; mast cells, 0.25 per cent. One "intermediate" megaloblast. Anisocytosis present; average diameter (100 cells), 6.48 microns, smallest cell, 4.3, largest, 8.6 microns. No poikilocytosis nor punctate basophilia, slight polychromatophilia. *Urine*: Orange colored, slightest possible trace of albumin, bile absent, urobilin and urobilinogen present. Sediment, no casts or blood. *Feces*: Formed, color a rich golden ochre, acid. Microscopically, numerous starch granules, no excess of fat or muscle fibers; the solid particles are intensely bile-stained. Marked reaction for urobilin, traces of bilirubin.

CASE IX. E. N., aged twenty-three years, son of J. N. At the age of eight he became jaundiced, without other symptoms. As a boy he often felt listless and suffered from nose-bleed. From the age of twelve to fourteen he had pain in the right shoulder, and at fourteen began to have attacks of typical *biliary colic*. Two years later he had 12 gallstones removed at operation; since then there has been no more colic. The jaundice deepens after unusual fatigue, and is more marked in the summer than in the winter. Minor illnesses of any sort cause an increased yellowness. There have been no "*bilious attacks*." Enlargement of the spleen was first noted in 1907, by Dr. W. H. Smith. The patient does not feel sick at all, and seems alert and active.

Physical Examination, February, 1910. Rather slightly built, well nourished, skin and conjunctivæ a lemon-yellow color. Heart negative except for a slight systolic murmur in the pulmonary area. Pulse normal in rate. *Spleen*: Considerably enlarged, reaching from the eighth rib to 1 cm. above the navel, long axis 17 cm. *Liver*: Not increased in size. *Blood*: Red cells, 4,032,000. Hemoglobin, 70 per cent. (Dare). Color index, 0.9. Leucocytes, 13,000 at 4 P. M. The fresh blood stained with brilliant cresyl blue shows reticulation in about 10 per cent. of the red corpuscles. In stained smears there is

distinct anisocytosis, with decreased average diameter (6.62 microns). No polychromatophilia nor punctate basophilia. No nucleated red cells, blood plates normal. Differential count: polynuclear neutrophiles, 71.25 per cent.; lymphocytes, 21.5 per cent.; mononuclears and transitionals, 5.75 per cent.; eosinophiles, 1.25 per cent.; mast cells, 0.25 per cent. *Urine*: Orange, bile pigment absent, urobilin and urobilinogen in large amounts. Indican not increased. Uric acid and oxalate crystals in the sediment. *Feces*: Formed, color raw Sienna, microscopically normal. Urobilin strongly positive.

CASE X. F. N., aged twenty years, daughter of J. N. For five years past slight yellowness of the eyes and skin has been noticed. Up to the age of twelve she had frequent *bilious attacks*, with vomiting of bitter stuff, lasting up to three days. Never colic or nose-bleed. The jaundice is increased by late hours and fatigue, and she gave up going to dances for this reason. It becomes more marked in hot weather. For some years she has been pale. Lately her joints are stiff, but limber up with exercise. (Stiffness probably muscular.) She often has a feeling of lassitude. Otherwise she is well, except for an abnormal appetite; she does not feel satiated after a hearty meal (bulimia). The bowels usually move twice a day.

Physical Examination. Rather slender girl, but well developed and nourished. The slight tinge of yellow in the skin is rather becoming. The conjunctivæ appear more yellow than the skin. The heart is not enlarged; there is a soft systolic murmur in the pulmonary area. Pulse, 84. *Spleen*: Readily palpable, about 2 cm., below the ribs. *Liver*: Not enlarged. *Blood*: The serum gives a strong reaction for bilirubin. Red cells, 3,564,000. Hemoglobin, 70 per cent. (Sahli). Color index, 1. Leucocytes, 6600. Anisocytosis present, the average diameter of the red cells decreased (6.22 microns). No nucleated red cells. No poikilocytosis, polychromatophilia, or punctate basophilia; platelets normal. Differential count: Polynuclear neutrophiles, 74.75 per cent.; lymphocytes, 20.25 per cent.; mononuclears and transitionals, 3.75 per cent.; eosinophiles, 0.75 per cent.; mast cells, 0.5 per cent. *Urine*: Reddish

yellow, no bile or urobilin, urobilinogen present in traces. Indican normal. Slightest possible trace of albumin, but no casts or blood. *Feces*: Soft, greenish yellow, acid. Microscopically there is an excess of neutral fat, with a few calcium soap crystals, but no excess of starch or muscle. Intense reaction for urobilin, considerable bilirubin.

Family IV. At least three members affected in three generations, probably several others. (Investigated through the kindness of Drs. N. A. Ludington and George Blumer, of New Haven.)

CASE XI. J. T., aged fifty-nine and one-half years, male, second child, of Scotch parents. *Family history*: His father, who died at seventy, of pneumonia, suffered from frequent attacks of vomiting of bile, lasting about a day; it is probable that his skin was yellow. Four brothers and one sister lived to grow up; one of the brothers was yellow at times, and probably had the "bilious attacks." A son of this brother is said to be sallow. The patient married his first cousin on the father's side; she is sallow and has pain in the left side of the abdomen. She refused to be examined. Four children resulted from this marriage—two daughters who died in infancy, a son who is jaundiced (Case XII), and another son who is thought to be sallow. The patient's mother had severe arsenical poisoning while pregnant with him. *Past history*: The jaundice probably dates back to early manhood, when he began to have attacks of vomiting of bile, with headache, some pain in the right hypochondrium, and a decidedly yellow color of the skin. These attacks last two or three days, and are associated with an increase of the constipation to which he is subject. He frequently has urticaria, and used to have nose-bleed as a boy. Obstruction of the bowels at the age of twenty-two. Two years later had lead colic (occupation then, rubber-cutter). For fifteen years he has had attacks of pain in the one or the other great toe, coming on suddenly at night. He has been a hearty eater of meat, and a beer drinker.

Physical Examination. Medium build, well developed, fairly nourished. Skin yellowish; face of a sallow, leathery

color; conjunctivæ distinctly yellow. No lead line. The lungs show signs of emphysema. The heart is moderately enlarged to the left, with soft systolic murmurs at the apex and at the aortic area. Aortic second sound rather sharp. Subclavian arteries thickened, radials not. Pulse, 80; systolic pressure, 165 to 170. *Spleen*: Greatly enlarged, measuring 12 by 17 cm., not tender. Liver flatness from fifth rib to costal margin, where the edge of the organ is palpable. Distinct thickening about metatarsophalangeal joints of both great toes. No tophi. *Blood*: Red cells, 2,804,000. Hemoglobin, 50 per cent. (Tallqvist.) Color index, 0.9. Leucocytes, 7900. Moderate anisocytosis, average diameter normal (7.64 microns). No nucleated red cells. No achromia, poikilocytosis, polychromatophilia, or basophilia. Differential count: Polynuclear neutrophiles, 80.6 per cent., lymphocytes, 15.7 per cent.; mononuclears and transitionals, 2 per cent.; eosinophiles, 1.7 per cent. Urine of normal color; specific gravity, 1009; albumin, a slight trace; no bile or urobilin; a faint trace of urobilinogen present. Indican normal. In the sediment fairly numerous hyaline casts; no blood (chronic interstitial nephritis).

The complication with gout is of interest, but in the presence of lead poisoning and the overconsumption of meat and malt liquors is not surprising.

CASE XII. G. T., aged thirty-two years, son of J. T. The permanent yellow color was not noticed until ten years ago, but was probably present before that. Since the age of seventeen he has had "*bilious attacks*," in which he would feel tired, drowsy, and depressed, with jaundice, constipation, and headache, and toward the close of the attack vomiting of bile, or *nose-bleed*. Several such attacks in a year, lasting a day or two. They seem to be brought on by constipation, fatigue, or irregular hours of eating. Light attacks without vomiting once every two weeks. When twenty years old had a severe cramp in the epigastrium, doubling him up, and occasionally since then he has had similar attacks. (*Cholelithiasis*.) He has *hives* frequently, to which an occasional itching of the legs

may be attributed. Appetite good, sleeps "unusually well." Stools always dark, "like chocolate." He is said to have had malaria eleven years ago, but had no chills; at that time a doctor found the spleen enlarged. Two months ago a prominent European consultant made a diagnosis of Banti's disease.

Physical Examination. Medium-sized man, sparely nourished. The skin of the body is a pale lemon-yellow, while the face is a peculiar brownish-yellow, leathery color, unlike the hue of ordinary jaundice. The conjunctivæ are distinctly jaundiced. Heart not enlarged, slight systolic murmur at base. Pulse normal. *Spleen:* Greatly enlarged, measuring 22×13 cm., reaching below to the level of the spine of the ilium and to the middle line at the navel. It is smooth and hard, and tender at one point. *Liver:* Palpable at costal margin, area of dullness normal. *Blood:* Serum strongly tinged with bile, and gives a marked Hedenius reaction. Red cells, 3,492,000. Hemoglobin, 65 per cent. (Tallqvist). Color index, 0.9. Leucocytes, 5800. Two normoblasts seen. Marked anisocytosis, average diameter decreased (6.48 microns). No achromia, slight poikilocytosis, some polychromatophilia, no punctate basophilia, except in one normoblast. Platelets normal. Differential count normal. *Urine:* Orange, contains urobilin and urobilinogen, but no bile. *Feces:* Mushy, yellow (milk diet), alkaline. Numerous shreds resembling connective tissue. Microscopically normal except for increase in the calcium soap crystals. Urobilin strongly positive, bilirubin absent.

Stomach examination after Ewald breakfast: 40 c.c. undigested bread mixed with mucus, free HCl 0, total acidity 5, slight test for lactic acid (chronic gastritis).

CASE XIII. C. T., aged seven years, son of the foregoing patient, grandson of J. T. The eyes have been yellowish since birth. The color becomes more apparent when he is constipated. He has had no children's diseases, only frequent colds. Nose-bleed once, never colic or vomiting attacks, except after eating strawberries or bananas. Hives frequently. The child has seemed healthy, but never could run like the other boys, and

complains of a pain in the left side of the abdomen after exercise. Appetite and digestion good, bowels regular as a rule, sometimes constipated.

Physical Examination, March, 1910. Well developed for his age, and well nourished. He is the least jaundiced of this family, but the skin and conjunctivæ are distinctly though faintly yellow. On the legs, arms, and scrotum a few wheals, one on the scrotum showing hemorrhagic infiltration. Mucous membranes somewhat pale. Heart not enlarged, loud systolic murmur in pulmonary area and venous hum in neck, pulmonic second sound not accentuated. *Spleen*: Much enlarged, measuring 18 by 13 cm., smooth, not tender. *Liver*: Slightly enlarged; dulness above at sixth rib; liver palpable 3 cm. below costal margin. *Blood*: The serum on standing shows a green fluorescence and is strongly positive for bile pigment. Red cells, 3,412,000. Hemoglobin, 50 per cent. (Sahli). Color index 0.74. Leucocytes, 8500. Two normoblasts and one "intermediate" megaloblast seen. Marked anisocytosis, average diameter decreased (6.69 microns). Considerable achromia and poikilocytosis, some polychromatophilia, and very fine punctate basophilia. *Urine*: Somewhat high colored, no bile, urobilinogen absent, urobilin in traces. Indican normal. *Feces*: Formed, dry, yellowish brown, alkaline, microscopically normal. Urobilin present, but reaction with zinc acetate less than in the other cases. Bilirubin absent.

An interesting point in this family is the tendency to urticaria, which is present in all three generations.

The bibliography which follows makes no pretence at completeness. Only those articles are included which could be personally verified, hence some foreign references have been omitted. The French literature on the subject is very voluminous, owing to the fact that the same case may be reported twice by different observers, and that some authors feel it necessary to write many articles on the subject. Many such references are purposely omitted.

BIBLIOGRAPHY.

Chronic Family Jaundice, including the acquired form.

- P. Abrami. Bull. et mém. Soc. méd. d. hôp de Paris, 1908, xxvi, 329.
 J. A. Arkwright. Edinburgh Med. Jour. 1903, xiii, 52.
 T. Barlow and H. B. Shaw. Trans. Clin. Soc. London, 1902, xxxv, 155; also Med. Press and Circular, 1902, lxxiii, 564.
 E. Benjamin and E. Sluka. Berl. klin. Woch., 1907, xlv, 1065.
 Bettmann. Münch. med. Woch., 1900, xlvii, 791.
 Blum. Abstract in Deut. med. Woch., 1909, xxxv, 1773.
 A. Cade. Bull. et mém. Soc. méd. d. hôp de Paris, 1908, xxvi, 421.
 A. Cade and J. Chaliér. Lyon méd., 1908, cxi, 930.
 A. Campani and G. Ferrari. Clin. Med. Ital., 1908, xlvii, 394.
 R. Carporali. Med. Ital., Napoli, 1905, iii, 373.
 A. Chauffard. Bull. et mém. Soc. méd. d. hôp de Paris, 1901, xviii, 444.
 A. Chauffard. Semaine méd. Paris, 1907, xxvii, 25.
 A. Chauffard. Ibid., 1908, xxviii, 49.
 A. Chauffard and N. Fiessinger. Bull. et mém. Soc. méd. d. hôp de Paris, 1907, xxiv, 1169.
 Claus and Kalberlah. Berl. klin. Woch., 1906, xliii, 1471.
 Gandy and Brûlé. Bull. et mém. Soc. méd. d. hôp de Paris, 1909, xxviii, 369.
 A. Gilbert, J. Castaigne, and P. Lereboullet. Bull. et mém. Soc. méd. d. hôp de Paris, 1900, xvii, 948.
 A. Gilbert and P. Lereboullet. Ibid., 1903, xx, 385.
 H. P. Hawkins and L. S. Dudgeon. Quart Jour. Med., 1909, ii, 165.
 G. Hayem. Presse méd., 1898, i, 121.
 G. Hayem. Bull. et mém. Soc. méd. d. hôp de Paris, 1908, xxv, 122.
 R. Hutchison. (Further report on Murchison's family.) Clin. Jour., London, 1909, xxxiv, 241.
 R. Hutchison and P. N. Panton. (Same cases as in foregoing article.) Quart. Jour. Med., 1909, ii, 432.
 Jacob and Levy-Valensi. Bull. et mém. Soc. méd. d. hôp de Paris, 1909, xxvi, 219.
 H. v. Krannhals. Deut. Arch. f. klin. Med., 1904, lxxxix, 596.
 P. Le Gendre. Bull. et mém. Soc. méd. d. hôp de Paris, 1897, xiv, 457.
 P. LeGendre and M. Brûlé. Bull. et mém. Soc. méd. d. hôp de Paris, 1909, xxvi, 112.
 Lesné and Ravaut. (Experimental work.) Soc. de biologie, 1901, 1106.
 L. Lortat-Jacob and G. Sabaréanu. Rev. de méd., 1904, xxiv, 810.
 H. A. Mason. Quart. Med. Jour., Sheffield, 1902, xi, 40.
 O. Minkowski. Verhandl. d. Cong. f. inn. Med., 1900, xviii, 316.

- S. Möller. Berl. klin. Woch., 1908, xlv, 1639.
 C. Murchison. Diseases of the Liver, third edition, 1885, 481.
 W. Oettinger. Bull. et mém. Soc. méd. d. hôp de Paris, 1908, xxvi, 391.
 G. Péju. Loire méd., 1908, xxvii, 117.
 A. Pick. Wien. klin. Woch., 1903, xvi, 493.
 A. Plehn. Deut. med. Woch., 1909, xxxv, 1749.
 R. Pollak. Wien. med. Woch., 1908, lviii, 1489.
 F. J. Poynton. Lancet, 1910, i, 153.
 E. Renaux. Presse méd. Belge, 1909, lxi, 711.
 W. Starkiewicz. Rev. de méd., 1909, xxix, 61.
 K. v. Stejskal. Wien. klin. Woch., 1909, xxii, 661.
 H. Strauss. Berl. klin. Woch., 1906, xliii, 1590.
 H. Strauss. Ibid., 1908, xlv, 1643.
 H. Vaquez and Giroux. Bull. et mém. Soc. méd. d. hôp de Paris, 1907, xxiv, 1184.
 F. P. Weber. (Acquired case.) Amer. Jour. Med. Sci., 1909, cxxxviii, 24.
 F. P. Weber and G. Dorner. Lancet, 1910, i, 227.
 F. Widal and P. Ravaut. Bull. et mém. Soc. méd. d. hôp de Paris, 1902, xix, 984.
 F. Widal, P. Abrami, and M. Brûlé. Presse méd., 1907, xv, 641.
 Widal, Abrami, and Brûlé. (Experimental work.) Bull. et mém. Soc. méd. d. hôp de Paris, 1907, xxiv, 1354.
 C. Wilson. Trans. Clin. Soc. London, 1890, xxiii, 162.
 C. Wilson and D. Stanley. Trans. Clin. Soc. London, 1893, xxvi, 163.

Chronic Jaundice with Erythrocytosis.

- Guinon, Rist, and Simon. Bull. et mém. Soc. méd. d. hôp de Paris, 1904, xxi, 786.
 M. Mosse. Deut. med. Woch., 1907, xxxiii, 2175.

Fatal Icterus Neonatorum without obstruction of the bile ducts.

- G. A. Auden. St. Barth. Hosp. Rep., 1905, xli, 139.
 J. Busfield. Brit. Med. Jour., 1906, i, 20.
 J. A. Arkwright. Edinburgh Med. Jour., 1902, xii, 156.
 Ashby and Wright. Diseases of Children, Fifth Edition, 1905, 29.
 R. Beneke. Münch. med. Woch., 1907, liv, 2023.
 J. E. Blomfield. Brit. Med. Jour., 1901, i, 1142.
 P. Esch. Zentralbl. f. Gyn., 1908, xxxii, 969.
 L. Lagrèze. Beiträge z. Geburtsh. u. Gyn., 1906, x, 57.
 J. Pfannenstiel. Münch. med. Woch., 1908, lv, 2169, 2233.
 Schmorl. Verhandl. d. Deutsch. path. Gesellschaft, 1903, vi, 109.

Familial Splenomegaly, Gaucher's type.

W. Risel. Beiträge z. path. Anat., 1909, xlv, 241.

F. Schlagenhauser. Virchow's Archiv. 1907, clxxxvii, 125.

(These two articles contain good bibliographies.)

Marchand, Münch. med. Woch., 1907, liv, 1102.

DISCUSSION.

DR. GEORGE BLUMER (New Haven): It is apparently the history of these so-called rare diseases that, after the attention of the profession has once been called to their existence, they are no longer rare; and I think that we are much indebted to Dr. Tileston for giving us such a clear and succinct account of the prominent symptoms in this interesting disease. There is little question that as the profession in this country become acquainted with his paper, other families will be discovered in which the disease is present. I have been interested in chronic family jaundice for a number of years, but I have never run across any family that had it until this one turned up.

There is really nothing that I can add to Dr. Tileston's very complete summary of the disease. Perhaps there are some points that it might be worth while to emphasize. One, for instance, is the degree of jaundice. The first patient exhibited by Dr. Ludington was shown at night, and the jaundice was hardly apparent; but it was very evident on the following day. When patients are first seen at night, they ought to be seen again in the daylight, in order to make out the jaundice.

Then there are several points that might be of interest that I do not know about. I should like to ask Dr. Tileston whether in any papers that he has read there has been any suggestion of a relation between this disease and paroxysmal hemoglobinuria, another disease in which there is excessive fragility of the red blood-corpuscles.

Another point that seems to me interesting is that we have always recognized two different forms of jaundice, obstructive and hemolytic. So far as I know, although other varieties of hemolytic jaundice have been described, there is no statement in the articles on the subject to the effect that there is an absence of bile in the urine in other forms of hemolytic jaundice than the family jaundice. One certainly gets the impression that the general idea is that hemolytic jaundice has, as obstructive jaundice has, bile in the urine. Dr. Tileston may be able to say whether there is absence of bile in the urine in other forms than that due to family icterus.

Another disease that might cause confusion is the so-called Gaucher's disease, in which there is family enlargement of the spleen, but not usually associated with jaundice. It is interesting to consider what might arise in one of these patients if there were actual obstruction

from gallstones, as well as the other type of jaundice—whether the urine would contain bile then, and whether that might not lead to confusion.

One other point that ought to be emphasized is not to remove the spleen in these cases. In the only case in which this was done, the patient very promptly died.

Periodic Attacks of Indigestion in Children, Accompanied by the Presence of Diacetic Acid in the Urine.

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In presenting this subject for your consideration, I wish to report in outline a series of cases which illustrate the various symptoms of periodic attacks of indigestion in children.

CASE I. A. B., age four years, had been subject to attacks of recurrent vomiting for a year and a half. These attacks occurred at irregular intervals, without assignable cause, and always followed the same general course. After a day or two of malaise, constipation, and nervous irritability, vomiting came on—first the acid contents of the stomach, and then continued vomiting and retching for twenty-four or thirty-six hours. Mucus was rarely present, there was little temperature, but prostration was extreme, and the patient showed very clearly evidence of a profound and serious disturbance. The urine during the attack was at first scanty, later profuse, and contained an excess of urates and reacted strongly to the chloride of iron test for diacetic acid. There was no albumen, sugar, or casts. The movements were always clay-color and very offensive. The child became more and more drowsy and finally stupid. General physical examination negative.

CASE II. E. B., age two and one-half years, sister of Case I. Had a severe attack of vomiting lasting thirty-six hours, which came on without known cause. Had been in her usual health the day before vomiting began, she had eaten nothing to upset her and was not tired or disturbed. This attack resembled very closely that of Case I, and presented the same marked symptoms of uncontrollable vomiting, extreme prostration, stupor, and the same character movements—constipated clay-color and very offensive. Physical examination negative, very little temperature, urine showed the presence of diacetic acid.

The histories of both children are so nearly alike that they can be reported together.

Family History: Decidedly rheumatic on paternal side; neurotic on maternal. Both children were artificially fed on cow's milk. Development was slow, and the feeding problem always difficult; there were frequent attacks of colic, indigestion and constipation. There were no marked symptoms of malnutrition, and rachitis was not evident. There had been no other serious illness.

Examination of urine negative, except at the time of vomiting attacks and then always contained diacetic acid. The urine was examined repeatedly and for days at a time, and this found to be constant, and often an attack could be anticipated by the appearance of the acid, after days of absence.

In both children the diet had been very carefully controlled, and was under rather than above normal requirements. Both children were of a neurotic type.

Under treatment there has been a marked lessening in the number and severity of the attacks of vomiting. Both children have developed fairly well, but show evidence of a rheumatic constitution. Case I has had joint pains and frequent attacks of tonsillitis, and Case II has had *erethema nodosum* and tonsillitis.

CASE III. Convulsions accompanied by diacetic acid in the urine. S. C. Male.

Family History: Decidedly neurotic on paternal side, and a history of convulsions in children dating back three generations. Mother neurotic. No history of rheumatism.

Personal History: Breast fed for seven months, but did not do well; was colicky, movements contained curds, was constipated and always fretful and nervous. After seven months was given condensed milk, and later, cow's milk, with about the same general results as with breast milk. Slow in development. No symptoms of rachitis. No serious illness since birth except convulsions. From one year to eighteen months had frequent attacks of diarrhoea, without assignable cause. At twenty months had an attack of vomiting, and later convulsions. Bowels somewhat loose; movements smooth, grayish in color and very offensive. Convulsions, which were general, continued at frequent intervals for twelve hours; the child was stupid and depressed. After this sickness recovered promptly and was well for six months, except for an occasional diarrhoea. His diet was light, easily digested and given regularly. He spent much of the summer at the seashore. Later had a second attack of convulsions which in every way was similar to the first. The movements were of the same character—loose, gray and offensive. The patient was drowsy for several hours before the convulsions appeared. Convulsions continued at intervals for ten hours and were not controlled by the most energetic treatment. There was very little temperature; urine was passed frequently. No

focus of irritation could be found. He seemed perfectly well for six months, and then had an attack exactly like the other two. At this time the odor of acetone was noticed on the breath and diacetic acid was found in the urine. No other abnormalities. Four months later was taken ill exactly as in his previous attacks. Full doses of castor oil and later bicarbonate of soda, Gr.XX, every two hours were administered. In this attack there were no convulsions, although otherwise it closely resembled his previous attacks, with vomiting, stupor, clay-colored offensive movements and diacetic acid in the urine. In the following two months two slight attacks without convulsions. Since that time, now one and one-half years, there has been no return of the convulsions, and the child's general health has improved.

CASE IV. Male. Age eleven years.

Family History: Neurotic.

Personal History: Was well until six years ago, when he had typhoid fever. Soon after it was discovered that the optic nerve of left eye was atrophied, and also a slight deafness. In 1906 was operated on for adenoids. Always troubled with bed-wetting. Measles in 1907. In September, 1908, had a severe attack of intestinal indigestion, ill two weeks. One month later had another severe attack of three weeks' duration; was delirious, some temperature, tongue and lips swollen, and he was unable to retain nourishment. From then until January, 1909, had several light attacks of indigestion, accompanied by fever. These attacks always two weeks apart and came invariably on Saturday and Sunday. From January to June was quite well, and then had a severe attack which lasted several days. He came under my care at that time—temperature 101° , tongue coated, abdomen distended, bowels constipated. This illness resembled the so-called ordinary bilious attack.

Examination showed heart and lungs negative. Nothing abnormal in abdomen. No glandular enlargement. Reflexes normal.

Some evidence of a neurotic tendency—head asymmetrical, spade mentally unusually bright.

Further questioning showed that the patient is irritable just before an attack and always easily upset if things do not go right.

He is somewhat notional about his food and prefers cereals and potato. Is constipated. Examination of urine negative, except the presence of diacetic acid at time of the attack.

CASE V. Male. Age ten years. This case presented many symptoms similar to the cases already reported and had been treated for intestinal indigestion and dieted very carefully for about three years. Had periodic attacks resembling Case IV, but of a milder form. Family history neurotic. Diacetic acid in the urine at time of attacks.

CASE VI. Recurrent bilious attacks similar to Case V. Family history rheumatic.

All of these cases present a certain similarity—vomiting, clay-colored, offensive movements, periodicity without assignable cause, all of a rheumatic or neurotic ancestry, and all showing the presence of diacetic acid during the attack. This is the distinctive feature in these children.

CASE VII. As a parallel to those already mentioned, this case is interesting. Male. Age four years. Always had difficulty in digesting his food as a baby. He was fed cow's milk in high proportions and was overfed. Did not gain well, was colicky and always constipated. Had several attacks of vomiting during the first year. At two and one-half years was ill for weeks with a pyonephrosis. Colon bacilli found in the urine at that time and his condition thought to be due to an infection from the intestinal tract. Is subject to frequent attacks of indigestion, with fever. Following this serious illness already referred to, the diet has been very carefully regulated, but constipation has always been a troublesome symptom. At no time has diacetic acid been found in the urine, and there never have been the marked nervous symptoms in this child that have been so prominent in those reported. Family history negative. This case would be considered one of chronic intestinal indigestion, and the treatment indicated a careful supervision of the diet and a daily laxative to overcome the constipation which undoubtedly causes the attacks of indigestion.

Other children have been seen with diacetic acid present in the urine most of the time; cases of chronic intestinal indigestion, in which the element of putrefaction of the intestinal content was noted. In these cases periodic exacerbations accompanied by an increase in the acid did not occur.

Diacetic acid is one of the higher chemical compounds associated with acetone and is the result of intestinal decomposition of food.

Various theories have been suggested connecting diacetic acid with cyclic vomiting and recurrent attacks of indigestion in older children.

Gee, who described cyclic vomiting in 1882, and who was one of the first to direct attention to this disease, attributed the vomiting to a crisis of intestinal origin. At this time the presence of diacetic acid in the urine was not recognized.

Marfan, whose studies have been confirmed by Edsell and Pierson, associates the attacks of vomiting with diacetic acid.

Griffith explains the symptoms as due to a toxic neurosis: Edsell, as an acid intoxication.

Holt has found an increase in the elimination of uric acid during the attacks of vomiting and believes the underlying cause is uric acid diathesis, which often shows later as attacks of migraine.

Marfan says acetone is not the cause of the vomiting, but the result, and Morse has found acid bodies enormously increased during convulsions and considers the convulsions and acid the result of some common cause.

Kerley advises an antirheumatic treatment for a long period of time.

Other theories are, a latent appendicitis suggested by Brœa, and a pseudo-meningitis spoken of by Gralkow.

All authorities agree that the exciting cause of the attacks of vomiting are fright or excitement, fatigue, anger, exposure to cold and other similar influences acting through the nervous system. Many agree also that the attacks are not due to errors in diet.

Fischl has lately suggested the possibility of two varieties of attacks:—one secondary to an acute illness of another kind, such as angina, measles, diphtheria, and a primary attack which he believes is absolutely hysterical. This theory is based upon the prevalence of the disease in the families of the well-to-do; a nervous inheritance which is often present, its occurrence in brothers and sisters, and particularly the sudden return to health after an attack, and the effects of suggestion in treatment. This theory, while plausible, does not explain the presence of acetone except as a constant condition. In many cases acetone, as shown by diacetic acid, appears only at the time of the attack, as in Case I, and cannot therefore be an indication of a chronic intestinal indigestion which Fischl believes.

Acetone may be present in other conditions—starvation, carcinoma of the stomach, after narcosis, in many digestive disorders, and is not uncommon in fevers, particularly in chil-

dren. In any event diacetic acid is always an evidence of a grave disturbance of metabolism.

A fullness of the liver, icterus at the conclusion of attacks, and the clay-colored stools which are often noted, suggest an hepatic insufficiency which leads to an acetonurea in consequence of a disturbed function of the liver.

If one may suggest a theory based upon the cases reported in this paper, and with the accumulated evidence spoken of by many observers, the neurotic and rheumatic element must be recognized as a contributing cause. Children born with a defective nervous system are subject to periodic attacks of indigestion through the abnormal action of the nerves controlling the digestive function. Under usual conditions digestion proceeds in its normal manner, but through external irritants, fright, anger or fatigue, digestion is perverted, putrefactive changes in the intestinal contents occur, resulting in toxic symptoms and the presence of the diacetic acid in the urine.

The condition then is neurosis, toxic in character, based upon a defective nervous control, the result of an inherited unstable and irritable nervous system. That it is not entirely diet is clearly shown in Cases II and III, in which paroxysms appeared under a most carefully arranged diet plan; and particularly in Case IV, in which diacetic acid appeared in a diet composed largely of cereals and potato, the elements which are least prone to putrify and the recognized remedies for acetonurea. It would appear that the acid is a symptom and not the cause of the attack.

This theory seems reasonable when we remember the various manifestations of a rheumatic or neurotic inheritance often seen in children—frequent attacks of tonsilitis, chorea, tics, night terrors and joint pains, which are the local symptoms of an inherited condition and which appear, under proper influences, as indicative of an underlying constitutional cause.

If this idea is correct, then treatment should be directed to the cause and not the result. Most of these children are neurotic, they are anæmic, underweight, and on account of

the digestive symptoms often underfed. An underfed child is apt to be a nervous child.

In the cases related the general plan of treatment was a full and generous diet, watching carefully sweets, starches, and fats; a régime of normal child life; freedom from fatigue, excitement and worry, plenty of sleep, an abundance of fresh air, bathing, and a daily laxative of sod. phosphate.

When symptoms of an approaching attack appeared, a let-up in all food, a thorough cleaning of the digestive tract with castor oil followed by repeated doses of sodii bicarb. Under this plan excellent results were obtained.

DISCUSSION.

DR. FRANK P. UNDERHILL (New Haven): There is little doubt that the symptoms described by Dr. Murphy are dependent upon defective nervous control, and that it has been shown repeatedly that a child may inherit or acquire a predisposition to such disturbances. It is well known that a child is much more easily put into a condition of defective nervous regulation than is an adult; and what appear to be apparently unimportant factors may, indeed, act as a sufficient stimulus for the production of the abnormal symptoms.

It is conceivable, therefore, and may be probable, that excessive putrefaction in the intestine may serve as such a stimulus in these neurotic and undernourished subjects.

On the other hand, I do not think that the presence of diacetic acid in the urine in these cases should be over-emphasized. Beta-oxybutyric acid, diacetic acid, and acetone comprise the so-called acetone bodies; and they probably arise within the body as the result of the incomplete combustion of fats. Beta-oxybutyric acid is formed first, and on oxidation yields diacetic acid; while acetone is formed from diacetic acid by the elimination of carbon dioxide. I believe that diacetic acid is neither the cause nor the direct result of the pathological condition under discussion. Instead, I should ascribe the presence of this substance in the urine to the condition which accompanies the abnormal manifestation; namely, to undernutrition, in which it may be easily demonstrated that diacetic acid is always present. Its presence in the urine in these cases at the time of the attack only may be explained on the assumption that at this special period the nutritive condition is at a particularly low ebb; and that the progress of the trouble still further lowers the nutritive balance, resulting in the appearance of diacetic acid. In other words, a condition of acidosis obtains as the

result of undernutrition. Young children are thrown into a condition of acidosis with extreme ease. The urine of normal suckling infants always contains a small quantity of the acetone bodies. A moderate degree of acidosis, especially in children, should not be regarded as a grave symptom.

DR. CHARLES A. GOODRICH (Hartford): I agree with Dr. Underhill in feeling that the presence of diacetic acid should not be overestimated in this class of cases. On the other hand, a paper such as has just been presented is both timely and suggestive to us; for, as in the past we have been, perhaps, inclined to consider these cases of cyclic vomiting with the presence of diacetic acid as a class by themselves, this class has to be further enlarged and, in addition to these cases that have been mentioned, I think that we should also bear in mind certain intestinal disorders in children in which there is, besides this cyclic vomiting and convulsions, a certain nervous phenomenon resembling the beginning of diabetic coma in the adult. These cases should be included in considering this matter; and whereas certain cases in which the diacetic acid accompanies digestive disturbances improve by the use of soda, there are others that do not. It seems to me that this very convenient test gives us a clue in regard to treating certain intestinal conditions in which these symptoms are present, particularly the nervous ones.

I would emphasize what Dr. Murphy has said regarding these cases requiring a generous diet. As you look over such cases, you see that the tendency is to diminish or limit the diet or to treat them with a great deal of temerity; and inasmuch as the diet in a good many cases apparently does not influence these attacks, the result is that these children become increasingly malnourished. The suggestions of the paper, especially this simple clinical test as an aid in certain of these intestinal disturbances, and also the point of considering the patient's well-being between these attacks, are of considerable value.

The Relative Value of Symptoms, Physical Signs, Tuberculin, and the X-Ray in the Diagnosis of Tuberculosis.

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So voluminous is the literature pertaining to the early diagnosis of tuberculosis that I almost feel like apologizing for choosing so trite a subject. My excuse is, that while incipient cases are detected somewhat more frequently perhaps than a few years ago—at least in the larger cities—there are still many mistakes made in diagnosis. These errors are the result of not appreciating the full significance of the various physical signs and symptoms.

The incorrect diagnoses are of two varieties, the more common being the failure to recognize definite indications of the disease. The other mistake is the erroneous diagnosis of tuberculosis on insufficient evidence. As this latter error is not generally discussed, we will devote a few minutes to its consideration.

Two classes of physicians make this mistake. One comprises the very conscientious men who are thoroughly alive to the urgent need of the early detection of the malady and examine their patients with minute care, but with an eye for position signs only. Totally disregarding the overwhelming negative evidence, they pin their diagnosis to a single sign. These are they who make tuberculous mountains out of benign molehills.

In the other class we find those physicians who, either because of insufficient time or laziness, do not make a careful examination, but rely upon one of the aids to diagnosis, failing to realize that these measures are aids to diagnosis only when considered with all the clinical evidence.

There are many who do not appreciate that it takes from half an hour to an hour to obtain a history, make a careful examination and give the necessary advice. Even then a second or third examination may be needed before an opinion can be given. Finally, it should be remembered that the absence of physical signs, like the failure to find tubercle bacilli in the sputum, does not exclude tuberculosis when the symptoms point to that diagnosis. When these two facts are universally understood, the day of early diagnoses will dawn. The physician who awaits the finding of tubercle bacilli in the sputum before hazarding a diagnosis of tuberculosis, wastes invaluable time which no subsequent activity and diligence on his part can atone for.

In the short time allowed to this paper we can only consider a few of the more important physical signs and symptoms. The general appearance of the patient is very untrustworthy evidence, as Barnes (1) found that over 60 per cent. of his incipient cases appeared to be in good health.

Physical Signs. Contrary to some statements, inspection oftentimes gives us information of the greatest value. While retraction at the apex suggests an old lesion, which may or may not be active, distinct lagging with diminished expansion of the apex is one of the most important signs we have of an active lesion. Turban (2) considers it "certain evidence of lung disease." In children it occasionally is due to enlarged bronchial glands. Tenderness to palpation seems more common in the acute than the chronic cases, and while not present in the majority of patients, its occurrence has considerable significance. Lagging, tenderness, with possibly slight muscle spasm at an apex, almost invariably means an active lesion at that site. Tenderness over the upper thoracic spines, the spinalgia of Petruschky (3), while not pathognomonic of tubercle disease of the bronchial glands, is quite a constant sign in early cases with toxic symptoms. The point of maximum tenderness seems to be at about the fifth thoracic vertebræ. Advanced cases do not present this phenomenon.

Dullness at the apex usually signifies a tuberculous lesion at that site. Several clinicians have demonstrated, however, that

especially in children this dullness may be due to induration collapse at the apex, the result of obstructive nasal breathing from adenoids. Grancher (4), and more recently Bing (5), attribute the dullness to enlarged bronchial glands, which may or may not be tuberculous.

Dullness over the fifth and sixth thoracic spines and to the side of these vertebræ is very suggestive of bronchial gland enlargement.

To be of value percussion must be performed very gently, as the sense of resistance is of about as much significance as the character of the note obtained.

Auscultation is the most valuable of our clinical methods, but the practice of listening only for râles cannot be too strongly condemned. In auscultating, the character of the respiratory murmur should receive our first attention, all adventitious sounds being disregarded for the time being. The first change in breathing consists in a weakening of the respiratory murmur, which assumes a tremulous character, referred to as rude or granular breathing. The presence of marked broncho-vesicular breathing without râles at one apex should make one examine the other with great care, as the more recent lesion will often be found there.

Cog-wheel respiration in the first and second interspaces on one side, with faint breathing above the clavicle, is very suggestive of a lesion at the apex. Bronchial breathing and whispered bronchophony over the upper thoracic spines is usually indicative of enlargement of the bronchial glands.

We next seek for râles, and they will often be unrecognized unless we have the patient cough at the end of expiration. The presence of râles over a limited area on several examinations suggests a tuberculous focus, especially when they are heard over the upper part of the lung. But râles at an apex may be due to other conditions. Koch (6) states that 15 per cent. of his patients with apical catarrh failed to react to tuberculin. Lord has reported a few cases of influenza with persistent râles at the apex. If the lesion is tuberculous, one cannot say from râles alone that the disease is active. I have known them to persist for years after all symptoms disap-

peared. Do not think that I consider râles of little significance. When accompanied by symptoms they are perhaps the most important single sign of tuberculous disease. Frequently, however, the diagnosis must be made in their absence. From râles alone one cannot diagnose clinical tuberculosis. We must not lose sight of the fact that there is a great difference between clinical tuberculosis, which gives symptoms and needs treatment, and anatomical tuberculosis, which for the time being is not giving symptoms and does not need treatment.

The physician with a good ear and poor judgment is almost as dangerous to the community as the man who examines the lungs through the clothing and impressively tells his patient that he is "sound as a dollar." The former fills sanatoria with the nontuberculous; the latter, graveyards with consumptives.

Clinical History. This is so important that the whole time allotted to this paper might well be spent in its discussion.

Careful inquiry must be made as to the exposure to tuberculosis, either in the family, in business, or in social relations, bearing in mind that in some cases the infection comes from a tuberculous servant. The state of the health during childhood and adolescence must be carefully investigated, as not uncommonly the first symptoms appeared many years previously. We are apt to overlook the fact that tuberculosis may exist for years without completely disabling the person, or causing much lung destruction. The history of these individuals is punctuated with times of "running down," but owing to their resistance, or the mildness of the infection, the battle has been a draw. Two histories will illustrate this:

Mrs. E. G., aged forty-four. When a child was never strong. At twelve was thin and pale, and doctors feared she might "run into consumption." When twenty-five years old she ran down and had a bad cough the greater part of a year. Six and one-half years ago the patient had another hard cold, which terminated in a mild pneumonia. Following this, was told that her lungs were "weak." Each winter would have severe colds. For the few months before I saw her she had been running down and coughing slightly. A large part of her life she felt "dragged out" and tired, but she and her physician attributed it to a retroversion and laceration. Notwithstanding that

the infection was at least nineteen years old, she only had a slight lesion at both apices.

Miss E. G. C., aged thirty-two. As a child had poor appetite, and was weak and delicate. Had bilateral pneumonia at fifteen months. The infectious diseases, including whooping cough, in early life. At sixteen had night sweats and a cough of such severity that she would "get black in the face." Recovered, and for two years was in good health; then she again began to cough, and the abdomen became swollen. Again recovered, but from the twentieth to twenty-second year had a cough that necessitated taking hold of something to support herself during the paroxysms. Six years ago had ovary and appendix removed, and intestines were "said to be involved." The few months previous to my seeing her she had been quite well, except for a slight cough and extreme weakness. As she expressed it, she had been "chronically tired and lazy" as long as she could remember.

Although of sixteen years' duration, her lesion was almost wholly limited to the lungs above the clavicles, the active process being at the left apex.

The periodical hard attacks of coughing suggested bronchial gland involvement, and the physical signs and X-ray picture showed this to be the case.

A patient's statement concerning his past illness should never be accepted without going thoroughly into his symptoms at that time to determine whether he really had "malaria," "grip," or "nervous prostration," as the case may be. As to his present symptoms, one should inquire concerning cough, fatigue, spitting of blood, night sweats, lost weight, pain in the chest, anorexia, indigestion, dyspnoea, and interscapular back-ache. Unless one have a special history blank, it is very easy to omit one or more questions, and by so doing the key to the diagnosis may be missed.

Cough and blood spitting are two symptoms which often send a patient to his physician, or to a throat specialist.

No man doing special work has greater opportunity to further the early diagnosis of tuberculosis than the laryngologist. He who treats a chronic cough without first having the lungs declared sound by one proficient in chest examinations is assuming a grave responsibility.

Only recently I found advanced disease of the whole of the right lung with infiltration of the left apex in a patient who

was receiving throat treatments for his cough. The laryngologist had examined the lungs and stated that they were not diseased. On the other hand, I have detected a very early lesion in a number of cases who had been refused treatment by throat specialists till their lungs had been examined. The fact that the cough of tuberculosis may be temporarily helped by throat treatments quiets any suspicion as to the gravity of the condition.

The patient should be asked if he coughs until he gags or vomits. Though all patients with tuberculosis do not have such a cough, a very large percentage of those who gag or vomit have tuberculous disease of the lungs or bronchial glands. Professor Delafield used to say that pertussis and tuberculosis were the two diseases with which the patient coughed till he vomited. This occurs more frequently as an early symptom than blood spitting, and it has nearly as much significance.

While hemorrhage in the great majority of cases means tuberculosis, and should always be treated as such until proven otherwise, one may have blood-streaked expectoration from ruptured varicose veins in the post-pharynx and nares, and also from the unconscious sucking of the gums.

I know a man who was a patient at one of the best sanatoria in this country for several months before it was ascertained that the blood he expectorated came from his gums. The diagnosis was made more difficult because of a positive reaction to the subcutaneous tuberculin test. Blood spitting from mitral stenosis is often mistaken for tuberculosis, one reason being the disappearance of the murmur when compensation is lost. The diagnosis should not be made hastily, as both diseases may be present.

Fatal hemorrhages have occurred from the erosion of blood vessels by tuberculous bronchial glands when the lungs were free from disease.

A young adult, previously ambitious, who complains of a constant weariness, should always incite our suspicion, especially if he has a rise of temperature and an unduly rapid pulse after moderate exercise.

Tuberculin. The most widely used aid to diagnosis is tuberculin. While a positive reaction is specific and always signifies a tuberculous focus somewhere in the body, considered by itself it by no means proves the individual to be clinically tuberculous. A focal reaction in lung, gland or bone, as the case may be, proves the tuberculous nature of the lesion.

The subcutaneous test is the most reliable. Owing to the large number of severe reactions reported from the employment of the conjunctival test, this method is less extensively used now than it was a year ago. It is not without its advocates, however. Hammon and Wolman, from their observation of the results in a large series of cases, reported at the recent meeting of the National Association for the Study and Prevention of Tuberculosis, that they consider it a safe and very valuable diagnostic measure when used in suitable cases. They advocate a 1 per cent. solution of "old tuberculin." Though I have never had any bad results from its use, I discarded it about two years ago because of the ill effects reported by others. I have always felt, however, that most of these bad results were due in part to its use where it was clearly contraindicated, and also to the employment of too strong solutions.

The skin test of von Pirquet loses much of its significance as the age increases. Yet an early strong reaction in an adult with suspicious signs and symptoms increases somewhat the probability of the condition being tuberculous. The faint reactions are very confusing, as they occur in many in good health, and also in a certain percentage of the cases who are going to do badly. I have seen several patients in whom the prognosis seemed good, but whose skin reaction was faint and evanescent, progress to a fatal termination in a few months.

Wolf-Eisner's contention that the type of reaction will often foretell the outcome has considerable to substantiate it. A negative skin test in a suspected case does not absolutely exclude tuberculosis, though it makes the diagnosis unlikely. The subcutaneous test is sometimes positive when the von Pirquet test is negative.

To sum up, we have in tuberculin a diagnostic aid of real value, if it is used in conjunction with the symptoms and physical signs. But the physician who would arrive at a diagnosis by merely scratching the skin and dropping thereon some tuberculin might as well settle the question by the toss of a coin.

X-ray Examination. The X-ray, which has proven so valuable in many lines of work, is of a great deal of assistance in the diagnosis of pulmonary conditions. The negative must not only be perfect, but the interpretation thereof is only of value when made by one who has had a large experience in this particular field, as it is the most difficult of all X-ray work.

Incipient cases that have been carefully examined come to post-mortem but rarely, and much more can be learned by the comparison of the physical signs and X-ray findings in a series of early cases than by the autopsies of advanced cases.

Dr. Arthur C. Heublein and I have studied over fifty cases on whom I had previously made a clinical diagnosis. To insure an unbiased opinion, the plates were studied by numbers, not by names.

In one case the physical signs indicated a lesion from the right apex to the second interspace (inner third), but the radiograph showed involvement of the greater part of the lung. In a second case, a lesion at one apex was suspected, but the X-ray showed both to be involved. In two cases where history and physical signs pointed conclusively to an active process, the X-ray failed to show it. In the remaining cases, most of whom had very early lesions, the X-ray and the clinical diagnoses agreed.

The X-ray is the greatest stimulus to careful diagnosis we have, and there is no better way to ascertain one's diagnostic ability—or limitation—than to compare his physical signs with the X-ray plate.

In deep-seated lesions, especially of the lower two-thirds of the lung, the X-ray will sometimes demonstrate a lesion that does not give physical signs. When the involvement is slight it may be necessary to make several plates before a diagnosis can be given.

In Conclusion. If we are to detect incipient tuberculosis, we must inspect, palpate, percuss, and auscultate our patient. More than that, we must question him, and question him at length. The physician who cannot or will not devote at least half an hour to this consultation should refer his patient to one who will, as an incomplete examination gives the patient an unwarranted sense of safety.

Our eyes, fingers, and ears are like the scouts of an army, who bring to headquarters information of varying importance. The observation of one would appear to show the urgent need of immediate retreat, but that of the others would make this action seem unwise. Only after all the reports have been carefully weighed is it decided which is the most expedient course to pursue.

REFERENCES.

- (1) *Journ. Am. Med. Assn.*, 1907, xlviii, p. 601.
- (2) "The Diagnosis of Tuberculosis of the Lung," New York, 1906, p. 59.
- (3) *München. Med. Woch.*, 1903, i, p. 364.
- (4) *Bull. Acad. de. Med.*, 1906, lxx, No. 36. Abs., *Journ. Am. Med. Assn.*, 1906, xlvii, p. 2041.
- (5) *Uglsk. F. Laeger.*, 1910, lxxii, p. 199. Abs., *Journ. Am. Med. Assn.*, 1910, liv, p. 1180.
- (6) "Trans. British Congress of Tuberculosis," iii, p. 94. Quoted by Barnes in *Boston Med. and Surg. Journ.*, 1905, clii, pp. 537 and 574.

DISCUSSION.

DR. WILLIAM B. BARTLETT (Hartford): As Dr. Stoll has stated, there is a great difference between clinical tuberculosis, which gives symptoms and needs treatment, and anatomical tuberculosis, which is not giving symptoms and does not need treatment. The relative value of symptoms, physical signs, tuberculin, and the X-ray is very different in the two forms of the disease.

In the detection of anatomical tuberculosis, tuberculin and the X-ray are of the greatest value; physical signs are of slight value in some few cases, and symptoms are valuable only by their absence, although a careful history of past illness is, of course, a great aid. It is, however, with the diagnosis of clinical tuberculosis that we are concerned. A careful family and previous history, as well as a history of the present illness, is of the first importance in arriving at a diagnosis of

clinical tuberculosis. Without symptoms, physical signs, tuberculin, and the X-ray may all three be disregarded; with symptoms, the diagnosis of tuberculosis may be made even though signs, the X-ray, and even the tuberculin test are negative.

When obtainable, a history of exposure to infection from some tuberculous relative or friend is important. It is, however, surprising how seldom such a history is obtainable. In 200 histories of patients admitted to Wildwood Sanatorium, all of which were taken with especial care in order to determine a possible source of infection, only 53, or 26½ per cent., gave a definite history of exposure; while 24, or 12 per cent., gave a possible, but improbable, exposure. In other words, 123 patients out of 200 (61 per cent.) could not remember any relative, friend, or associate that had ever suffered from tuberculosis. The importance of malaria in the past history should be emphasized. I recall one patient who was treated several months for malaria, although he was coughing and raising blood, as well as having chills, fever, and night sweats.

Among symptoms, I wish to emphasize the importance of pain. This pain may occur in any part of the chest or in the shoulder. It may be dull and boring, made worse by damp weather or by fatigue; or it may be sharp and quick, aggravated by cough or deep breathing. The most common pain in early cases is a dull ache in the shoulder or in the apex of the lung on the affected side.

Petruschky's spinalgia I have not found to be of much value. Of forty patients examined, I found it present in seven. Two of these seven were very neurasthenic individuals, one was nontuberculous, and two were cases suspected of bronchial-gland tuberculosis.

Regarding physical signs, I should like to add to Dr. Stoll's statement that "râles at the apex *may* be due to other causes," the statement that râles at the bases most *frequently are* due to other causes. I have had several cases sent to the sanatorium with râles at the base in which the râles rapidly cleared up, and proved to have been due to bronchitis. The frequency of râles at the base of the axillæ in normal individuals should be remembered.

The X-ray is, no doubt, of great value in experienced hands. For the benefit of those who cannot readily avail themselves of an X-ray apparatus, however, I will quote Dr. Minor of Ashville, who, in a recent article, states that he has not found that the X-ray examination can give information antedating rough inspiration, feeble breathing, or slight vesiculo-bronchial breathing; as it must, if it is to precede physical signs.

In speaking of tuberculin, I wish to emphasize Dr. Stoll's statement that a positive reaction does not mean clinical tuberculosis. I have had several patients sent to the sanatorium with no other symptoms or

signs than a positive von Pirquet reaction. These skin reactions are so confusing that they might well be discarded. If used, they should be considered only as a very feeble link in the chain of evidence. Notwithstanding the many new and simple tests that have recently been introduced, it is interesting to observe that we are gradually coming back to depend on the subcutaneous method as the most reliable.

That even the subcutaneous test may occasionally be at fault is shown by the following case: A. S., in July, 1909, raised a small amount of blood. He had no symptoms, and only a few doubtful signs at the right apex. Old tuberculin, in doses of $\frac{1}{2}$, 1, 3, 6 mgm. (the latter dose repeated), was given without reaction. As he felt perfectly well, he returned to work. Eight months later he had several more hemorrhages, and he is now at the sanatorium, with definite signs at the right apex.

DR. DAVID R. LYMAN (Wallingford): Dr. Stoll's comparison of the relative value of the history, the physical signs, tuberculin, and the X-ray shows that there is not one test of such supreme value that we can afford to leave everything else out of consideration and bank on that—and probably the most essential is a good, careful history. We get lots of cases with a history showing that a man has undoubted tuberculosis, though there are no signs in the lungs. Very few can tell when there is nothing wrong; but when a man comes in with a history of night sweats, etc., we have to make a diagnosis of tuberculosis being the probability—of its being the only thing that he can have. We should not wait until definite signs develop in the chest before making a diagnosis.

About the only thing that Dr. Stoll did not mention was the constant occurrence of little localized dry pleurisies in the chest in these cases. I have forty-seven patients in the sanatorium now with this sign, not showing itself by the rub given in the text-books, but more as râles on deep breathing; fine little râles, like the sound heard when you pull two sheets of fly-paper apart. The history of a previous case of pleurisy with effusion, and then indefinite symptoms, off and on, until finally the tuberculosis has developed, may often be elicited.

Regarding the tuberculin question, we are hearing more about this than about anything else just now; and I think it needs to be handled very carefully. It is one of the most powerful poisons that we have. I have never seen ill effects from its subcutaneous use in small doses, watched carefully. I do not think it is necessary to give tuberculin after you have your diagnosis made without it and the patient is willing to accept your opinion and act on it. I do not see what is to be gained by putting him through the pain and discomfort of the injections.

In regard to the eye test, I will state that I never use it. Men have reported hundreds of cases in which it has been employed without bad effects; but I have known of bad results, persistent corneal ulcers following when every precaution had been taken. In these circumstances, I never have felt like using the eye test, when we had the subcutaneous test, which is free from danger.

With reference to the X-ray, I had the satisfaction of comparing one or two cases also with Dr. Heublein. I do not think there is any question but that an expert can discover deep-seated lesions that an ordinary person would miss. We compared three cases. One showed extension down into the middle lobe that I had entirely missed. In a doubtful case, it is well to have a good plate made by an expert man.

DR. FREDERIC S. CROSSFIELD (Hartford): On behalf of the laryngologist, I would say that in the early stages of pulmonary tuberculosis there are no absolutely pathognomonic symptoms in the larynx. In the cases in which the larynx is congested, whether there is edema or thickening or induration that persists and does not respond to treatment, it is a symptom of possible pulmonary tuberculosis. In all these cases, unless they are acute and not long standing, with redness of the larynx, I always insist upon a thorough and rigid examination of the chest.

DR. JOHN B. GRIGGS (Hartford): While the positive von Pirquet test is not valuable in adults, the negative test is valuable; while the positive test is valuable in a child.

DR. HENRY F. STOLL (Hartford): The tuberculin test, if negative, as I said in my paper, makes the probability of tuberculosis being present very slight, but does not exclude that disease. In one particular case in which a large mass of bronchial glands were found, the patient was poorly nourished; and the cutaneous tuberculin test was given him three times, the reaction being negative. He may have had a quickly disappearing reaction, but I did not see it. Later, however, he gave a positive subcutaneous test.

The question of symptoms is of great importance. Long before the stethoscope was invented, and purely and solely by means of the symptoms, men diagnosed tuberculosis. The description of the symptoms of that disease given by Dr. Benjamin Rush of Philadelphia, over one hundred years ago, is as up to date as anything that can be found in a modern text-book. He made his diagnosis of tuberculosis without the aid of the stethoscope. If you do not get careful histories, you will miss many cases. After you have obtained a careful history, it is unusual to have the physical signs not agree with the diagnosis suggested by the history and the symptoms.

PAPERS READ AT COUNTY
MEETINGS

Papers Read at County Meetings.

HARTFORD COUNTY.

October 26, 1909.

- The Prevention of Insanity, . . . Dr. Whitefield N. Thompson.
Discussion, . . . Dr. Fred'k T. Simpson, Dr. Edwin A. Down.
The Early Weeks of Infancy, . . . Dr. Charles A. Goodrich.
Discussion, Dr. C. Brewster Brainard, Dr. Walter G. Murphy.
Some Minor Surgical Details, . . . Dr. George N. Bell.
Discussion, . . . Dr. Oliver C. Smith, Dr. Ernest A. Wells.

ADDRESS:

- The Development of the Blood in the Embryo and Adult,
Dr. Charles S. Minot (Harvard Medical School).

April 5, 1910.

- Functional Ear Tests, . . . Dr. Calvin Weidner.
Discussion, . . . Dr. M. H. Gill, Dr. Mark S. Bradley.
Tetanus with Report of Two Successful Cases, Dr. Harry C. Clifton.
Discussion, . . . Dr. Charles E. Taft, Dr. Frederick B. Willard.
Value of the Roentgen Ray in Diagnosis and Treatment,
Dr. Arthur C. Heublein.
Discussion, . . . Dr. Henry F. Stoll, Dr. Wm. H. Van Strander.

CLINICAL CASES:

(One hour will be devoted to five-minute reports of cases of interest. While the committee have planned for this hour, and have a definite program arranged, it is hoped that many more will avail themselves of the opportunity of reporting cases.)

NEW HAVEN COUNTY.

October 28, 1909.

DISCUSSION OF THE QUESTION: "DISEASES OF THE STOMACH."

- Diagnosis, . . . Dr. L. M. Gompertz.
Medical Treatment, . . . Dr. Edward F. McIntosh.
Surgical Treatment, . . . Dr. E. W. Smith.

DISSERTATIONS:

- Dr. E. T. Bradstreet,
Dr. John E. Lane,
Dr. Nelson A. Pomeroy.

April 28, 1910.

DISCUSSION OF THE QUESTION: "DISEASES OF THE JOINTS."

Tubercular Arthritis,	Dr. E. H. Arnold.
Gonorrheal Arthritis,	Dr. T. J. Kilmartin.
Acute Articular Rheumatism,	Dr. H. H. Smith.

DISSERTATIONS:

Dr. Joseph H. Townsend,
Dr. Joseph A. Cooke,
Dr. John E. Farrell.

NEW LONDON COUNTY.

October 7, 1909.

READING OF SEMI-ANNUAL DISSERTATION.

Uterine Fibroids, Dr. W. K. Tingley, Dr. P. H. Harriman.

April 7, 1910.

READING OF ANNUAL DISSERTATIONS.

Fallacies of Heredity and demands therefrom, Dr. H. M. Lee.
Intestinal Obstructions, Dr. Daniel Sullivan.

FAIRFIELD COUNTY.

October 12, 1909.

READING OF PAPERS.

Mouth Breathing, Dr. Herbert E. Smyth.
. A Case of Chylothorax, Dr. Fritz Carleton Hyde.

SYMPOSIUM ON ALCOHOL.

Alcohol as a Food, Dr. M. M. Scarbrough, New Haven.
Alcohol as a Poison, Dr. Thomas D. Crothers, Hartford.
Alcohol as a Remedy, Dr. Oliver T. Osborne, New Haven.

April 12, 1910.

PRESIDENT'S ADDRESS, Dr. Samuel Pierson.

Tubal Pregnancy (Eighth Month Specimen), Dr. Rosavelle G. Philip.
Discussion opened by Dr. S. M. Garlick.

Municipal Quarantine Regulations and Disinfection (Lantern
Demonstration), Dr. S. Dana Hubbard, New York.

Discussion opened by Dr. George E. Ober.

Indications for and Technique of the Operations for Induction of
Labor: Persistent Occipito-Posterior Positions and Craniotomy,

Dr. George L. Brodhead, New York.

Discussion opened by Dr. William L. Griswold.

WINDHAM COUNTY.

October 20, 1909.

Malignant Deciduoma,	Dr. Samuel Sullivan, New London.
Etiology and Treatment of Otitis Media,	Dr. M. H. Gill, Hartford.
Expert Testimony,	Hon. Thomas J. Kelly.
The Doctor in Politics,	Dr. John Weldon.

April 21, 1910.

Recent Legislation in Medicine,	Dr. W. L. Higgins, South Coventry.
Features in Nasal Surgery,	Dr. J. Hobart Egbert.
Prevalence of Syphilis,	Dr. J. B. Kent.

LITCHFIELD COUNTY.

October 12, 1909.

ADDRESS BY THE VICE PRESIDENT.

Sanitary Milk,	Dr. G. H. Wright.
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SPECIAL PAPER.

Difficult Cases of Infant Feeding,	Dr. Joseph Robinson.
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PAPERS BY INVITED GUESTS.

The Surgical Treatment of Gall Stones,	Dr. Joseph B. Bissell, New York City.
The Stomach and Duodenum from a Surgical Standpoint,	Dr. Frederick B. Willard, Hartford.

April 26, 1910.

Meniere's Disease, with Report of a Case,	Dr. F. S. Skiff.
The Therapeutic Use of Tuberculin,	Dr. David R. Lyman, Wallingford.
Some Observations on Systolic Blood Pressure,	Dr. E. K. Root, Hartford.
The Significance of Leucorrhœa,	Dr. Augustin H. Goelet.

MIDDLESEX COUNTY.

October 14, 1909.

DISCUSSION OF THE QUESTION: "INTESTINAL DISEASES OF BACTERIAL ORIGIN."

Bacteria of the Intestines,	Dr. F. B. Bradeen.
Dysentery and Mucous Colitis,	Dr. F. T. Fitch.
Diarrhœal Diseases,	Dr. K. C. Mead.

CLINICAL REPORTS.

The Autopsy Findings in an Obscure Surgical Case,	Dr. J. E. Loveland, Watertown.
A Case of Malignant Endocarditis,	Dr. J. M. Keniston.

April 14, 1910.

- Degrees of Responsibility of the Insane, . . . Dr. H. S. Noble.
 Defectives and Degenerates; A Menace to the Community,
 . . . Dr. J. M. Keniston.
 Parotiditis, . . . Dr. K. C. Mead.
 The Middlesex County Sanitarium for Tuberculosis, Dr. J. F. Calef.

TOLLAND COUNTY.

October 19, 1909.

- Legislative Matters, 1909, . . . Dr. William L. Higgins.
 Discussion, . . . Dr. James Stretch.
 Some General Considerations of Malignant Disease,
 . . . Dr. Harry M. Lee, New London.
 Discussion, . . . Dr. John P. Hanley.
 Treatment of Pneumonia, . . . Dr. Cyrus E. Pendleton.
 Discussion, . . . Dr. Thomas F. O'Loughlin.
 Preventive Medicine, . . . Dr. Wright B. Bean.
 Discussion, . . . Dr. Frank M. Dickinson.
 Tuberculosis, . . . Dr. Cyrus B. Newton.
 Discussion, . . . Dr. Edwin T. Davis.
- VOLUNTARY PAPERS.
 General Discussion.

April 19, 1910.

- Anæsthesia, . . . Dr. Frank M. Dickinson.
 Discussion by Dr. James Stretch, "Chloroform Anæsthesia"; Dr.
 Edwin T. Davis, "Ether Anæsthesia"; Dr. Thomas F. Rock-
 well, "Local Anæsthesia"; Dr. John P. Hanley, "Spinal
 Anæsthesia."
 Preventive Medicine, . . . Dr. Wright B. Bean.
 Discussion by Dr. Fred W. Walsh, "Personal Hygiene and
 Environment"; Dr. William L. Higgins, "School Sanitation
 and Quarantine"; Dr. Frank L. Smith, "Ventilation, Heating
 and Lighting"; Dr. Cyrus E. Pendleton, "Milk Supply, Other
 Foods and Preservation"; Dr. Thomas F. O'Loughlin,
 "Plumbing and Disposal of Sewage and Garbage."

OBITUARIES

Luther Augustus Davison, M.D., Hartford.

JOHN HOWARD, M.D., HARTFORD.

Dr. Luther Augustus Davison, son of John and Rosella (Richards) Davison, was born in Norwich, Conn., October 16, 1847, and it was in that city he spent his youth and obtained his preliminary education. In his early life, he showed marked mechanical ability, working in Meriden, and later with the Pratt & Whitney Company, in Hartford.

Dr. Davison graduated in medicine in the spring of 1882 from the University Medical College of New York. The doctor was a 32d degree Mason, belonging to Hartford Lodge, No. 88, A. F. and A. M., and to Washington Commandery, No. 1, Knights Templar, also to Sphinx Temple, A. A. O. N. M. S. He was an active member of the Putnam Phalanx, a member of the Hartford City Medical Society, the County Medical Society and also the State Medical Society.

Possessing a firm belief in the efficacy of medicine in the treatment of disease, a more than ordinary enthusiasm in his work, a pleasing personality, and no little personal magnetism, he succeeded in building up a lucrative practice, which he retained up to the day of his death. In the fall of 1909 he had an attack of pneumonia, from which he never fully recovered. On the thirty-first day of October of the same year, while returning from a professional visit, he was stricken on the street with apoplexy, and died at the Hartford Hospital soon after his arrival.

Dr. Davison was twice married, being survived by his second wife, a sister and two brothers.

Robert Eleazer Ensign, M.D., Berlin.

THEODORE G. WRIGHT, M.D., NEW BRITAIN.

Dr. Robert Eleazer Ensign was born in Hartland, Conn., February 25, 1834. He died at his home in Berlin, Conn., March 29, 1909, aged seventy-five years. His father was Eleazer Ensign, a shoemaker and tanner. His mother was Harriet Bosworth. Dr. Ensign was their only child living to adult age.

Dr. Ensign attended a short course at Harvard before attending medical college. His preliminary education was in public schools in Hartford and New Britain, and he was a school teacher.

His early life was spent in Hartland. He was graduated from the Albany Medical College in the class of 1857. His first medical practice was in Poquonock, then in Harwinton and subsequently at Poquonock again. Later he practiced about a year in Westfield, Mass., and came to Berlin twenty-five years ago. He was assistant surgeon in the Civil War in the 6th Connecticut Regiment; was medical examiner and health officer about twenty years; was a member of the Grand Army. He was a communicant in the Episcopal church in New Britain. In 1859 he married Emma Hatheway of Poquonock and had five children: Robert, now living in Winsted, Conn.; Harriet, who died two years ago; Alice and Mary, who died at the age of five or six years; and Thomas, now living in Berlin. Dr. Ensign was a Mason, and was surgeon of the Grand Army Post.

When Dr. Ensign was practicing in Harwinton I was located in Plymouth and we met regularly at the meetings of the Litchfield County Medical Association, and after leaving Litchfield County soon became members of the Hartford County Society. Dr. Ensign's birthday antedated mine just

one week. For nearly forty years we have met frequently and our spirits have been congenial.

The doctor's death came suddenly and unexpectedly. He had been failing very gradually and died from exhaustion. He was with members of his family sitting by a table in the evening, and after examining the day's mail, pointed to a part of it and said: "You can put that in the stove in the morning." Soon after that remark he sank down in his chair and was lifeless. His remains were taken to Poquonock for burial.

Like the majority of his brethren who practice their profession in rural vicinities, he invested his securities in the place "where moth and rust doth not corrupt and where thieves do not break through and steal," following the injunction of his Lord and Master, who directed his disciples to not lay up for themselves treasures on the earth. He did not despise the day of small things and was very considerate of the necessities of his patrons, being very kind to the poor and needy and finding it more blessed to give than to receive. Consequently his bank account was not enormous. Evidently he agreed with Andrew Carnegie that it was a sin for a man to die rich. To his surviving brethren he might say: "Go thou and do likewise."

John Pierrepont Codrington Foster, M.D., New Haven.

WILLIAM H. CARMALT, M.D., NEW HAVEN.

In the death of Dr. Foster the Commonwealth of Connecticut lost its most valuable individual professional asset. It has been well said, "Institutions live, men perish." While it is perfectly true that organizations of influence and value survive without regard to individuals, we must not forget that they came about as the result of individual inspiration and effort, and it is saying but a small part when we acknowledge that one of the most important public institutions of this State, from the standpoint of the political economist as well as philanthropist, owes its conception, development and birth to Dr. Foster's enthusiasm and self-sacrificing labors; it is a sad pity that he could not have lived to guide it to the accomplishment of the infinitely useful end he had so clearly in view.

John Pierrepont Codrington Foster was born March 2, 1847, in New Haven, where he lived nearly his whole life, dying there April 1, 1910. Of an ancestry identified with the best history of the city and colony, he could not be otherwise than intensely loyal to all that pertained to its welfare and good name. He was familiar not only with its history, but with its traditions and legends, and their recital was a constant source of interest to himself as well as of entertainment to his listeners. His education preparatory to college was at the Russell Military Institute. He was graduated from the Academical Department of Yale in 1869. Soon after he was attacked with pulmonary tuberculosis, necessitating a residence of several years in Florida. Feeling himself reasonably safe for a life in the North, he returned to New Haven, studied medicine at the Yale Medical School, was graduated M.D., in 1875 and at once began the practice of his profession. In 1877 he

was appointed Instructor in Anatomy as applied to Art in the School of Fine Arts in Yale University, which position he held with great satisfaction to his pupils until his death. The early part of his professional career was largely among the students of the University; the necessity of some kind of a hospital for them so impressed itself upon him that he advocated in the most strenuous way such an addition to the University equipment. The present Yale Home and Infirmary is the result of his influence upon the friends of the college and the administration of President Dwight. To Dr. Foster more than to any other one man does this institution owe its existence and he had more to do with its administration than any other physician. It was a grievous disappointment to him that its usefulness was so restricted by the unreasoning fears of some persons in the vicinity which prevented the admission to it of the milder forms of contagious diseases among students, who are still compelled to expose to infection their comrades in the college dormitories.

In 1879 he was appointed post surgeon to the United States Marine Hospital Service, holding the position until his death.

Early in his professional career Dr. Foster became intensely interested in the study of tuberculosis: he was the first physician in this country to use Koch's tuberculin, employing it in a case of pulmonary tuberculosis on December 3, 1890, having obtained the lymph through Professor Chittenden of the Sheffield Scientific School, some time before any one else had it in this country. His mind, however, was of too broad a cast ever to allow himself to become a mere specialist for private practice; the larger scope of the tuberculosis question impressed itself overwhelmingly upon him. Beyond the care of the individual he became engrossed in the consequences of the disease on the national life and early identified himself with the movement now recognized as of transcendent sanitary importance in the stamping out of the "great white plague."

He was one of the founders of the National Association for the Study and Prevention of Tuberculosis, was director and a member of the Executive Committee and contributed a paper

to the first meeting in 1905. His interest in the Association continued unabated until his death. He was also interested in the International Congress of Tuberculosis, was a vice president of the Sixth Congress in the second Section on Sanatoria, Hospitals and Dispensaries.

The piece of work that interested Dr. Foster the most in his professional career, and with which he was peculiarly identified, was the sanatorium* near Wallingford in New Haven County, and the success of this was a matter of the greatest pride and gratification to him.

The New Haven County Medical Association does not need to have recited the successful workings of this sanatorium, in all respects a model, attracting visitors from many parts of the country to study its equipment and methods. The sanatorium is exclusively for persons in the early stages of pulmonary tuberculosis, who are of very moderate means and residents of the State. Opening in September, 1904, with fourteen patients, the current sixth year averages seventy per diem. At the last annual meeting, May 24, the absence of the leading spirit of the organization was deeply felt and from every side came expressions of sorrow for the loss the institution had sustained.

At the Commencement of 1909 his Alma Mater conferred upon him, *cousa honoris*, the degree of M.A., using in part the following words: "In honoring men who come from various places, Yale does not forget those who live in the shadow of her walls. Dr. Foster has given his life to the town which his father adorned, and to the college where he himself took his degree forty years ago. Faithful in little, he has proved to be faithful in much; and while he visits the sick in the streets of our city, his influence is felt far beyond the bounds of his

*The name Gaylord Farm Sanatorium was adopted by reason of the liberality of one of our colleagues, Dr. Charles W. Gaylord of Branford, to whom the property belonged and whose ancestry had owned it since early colonial times. The terms of sale to the New Haven County Anti-Tuberculosis Association were so generous as to authorize the adoption of the name.

native state." Then, after speaking of his public work, it refers to the influence he exerted upon the undergraduates of Yale. "Trusted alike by the faculty and students, he has been of material assistance to both, and many a man, to-day, owes his health and his character to the kindly counsel he received at the critical period of adolescence."

In common with all others engaged in the prevention of the spread of tuberculosis, Dr. Foster appreciated that the State must take part in the struggle, so that it was but a step for him to institute measures to bring the matter to the attention of the General Assembly and urge early action. Accordingly a commission was appointed, of which he was necessarily chairman, with the result that in 1909 a permanent commission was created, empowered to purchase sites, erect suitable buildings, appoint administrative and medical officers in three counties of the State, to be extended to others as the necessities demanded. Dr. Foster threw himself into the work with all his energies. He gave almost his whole time to it, visiting sites all over the State, corresponding with authorities throughout the country on all the intricate questions necessarily involved; the kinds of buildings; the classes of cases to be admitted; the selection of officers in each locality; methods of administration; in fact everything pertaining to the subject, so that the trust confided in him should be handled to the best advantage financially, professionally and philanthropically. I know whereof I speak when I say, that the benefit to the patient and the good of the State were the sole guidance of his endeavors. He knew that he was overtaxing himself, he spoke frequently of "being tired all the time," but the work was before him and he could not rest.

Never of a strong constitution, he had had a sharp pneumonia twelve years ago; with the relics of a former active tuberculosis in his system, the physical strain, the constant combating of political antagonisms where he had anticipated support, the care for private patients who depended upon him and would not be denied, all contributed to use up his powers of resistance, so that when, what at first was a comparatively

limited lobar pneumonia, began, it rapidly extended to involve both lungs; a myocarditis developed to which he succumbed, as distinct a sacrifice to public duty as a soldier on the field of battle. He could have cared for his private practice without strain on his reserve strength, but his duty to the State as he saw it forbade him putting it aside. I beg to repeat, the State of Connecticut in his death lost its most valuable individual professional asset.

George Robert Harris, M.D., Norwich.

WITTER KINNEY TINGLEY, M.D., NORWICH.

Dr. George Robert Harris died from cerebral hemorrhage on the twenty-sixth day of October, 1909, at 3.15 P. M. He was stricken about 8 A. M., when he seemed in the best of health. Present with him during the time were: Dr. N. P. Smith, P. H. Harris and W. K. Tingley.

George Robert Harris was born in Preston, Conn., December 20, 1864, and was brought up to farm work. For some time he drove a milk wagon for his uncle. His early education was received in the common schools, and after graduating from the Norwich Free Academy in 1883, he studied medicine with his uncle, Dr. Orrin F. Harris of this city. In May, 1885, he graduated from the College of Physicians and Surgeons in New York City, the medical department of Columbia College, and in October, 1886, he entered the Charity Hospital in New York City as junior assistant surgeon. After remaining there for sixteen months, and attaining the position of house surgeon, he left in 1888 to accept a position as junior assistant in the Chambers Street Hospital, where he continued until April, 1889, the last six months being house surgeon. Dr. Harris then returned to Norwich and commenced practice in the office of Dr. Orrin F. Harris, his uncle, where he remained until July, 1890, when he opened an independent office in the Shannon Building.

Dr. Harris held the office of medical examiner for the town of Preston under Coroner Franklin H. Brown. He was a member of the surgical staff of the Backus Hospital. On June 29, 1909, Dr. Harris was appointed medical examiner for the town of Norwich by Coroner Brown, to succeed Dr. Lewis S. Paddock, deceased, and filled the office until his death, October 27, 1909.

Fraternally Dr. Harris belonged to Shetucket Lodge, No. 27, I. O. O. F., and to the Masonic fraternity. He was a 32d degree Mason; was a past master of St. James Lodge, No. 23, A. F. and A. M., a member of Franklin Chapter, Franklin Council, a past commander of Columbian Commandery, No. 4, K. T., and a member of all the Scottish Rite bodies and of Sphinx Temple of the Mystic Shrine of Hartford. In politics he was a Republican. He was a member of the Arcanum Club and the Norwich Roque and Tennis Club.

On November 27, 1896, Dr. Harris was married to Miss Jessie L. Hegarty of West Wareham, Mass., and two children were born to them. Surviving him are his wife and son, George A. Harris; his mother, Mrs. Catherine A. Harris (since deceased); three sisters, Mrs. G. Warren Davis of Preston, Mrs. Charles H. Preston, Jr., of Waterbury, and Miss Hattie A. Harris of the East Side, and a brother, Elijah D. Harris of Plainfield.

Dr. Harris was a member of the Norwich Medical Association, the New London County Medical Association and the Connecticut State Association.

In his professional work he ranked high in his chosen specialty of surgeon. Had he had the opportunity to work connected with the medical college in a large city, with the great chances that come from such associations for personal exploitation, he would undoubtedly have been a great operator and an instructor in that great branch of the profession.

He loved his work and never was more pleased than when he could instruct some new aspirant for surgical honors in whom he discovered the signs of capability. His operations, no matter how slight, were always surrounded with the extreme carefulness as to asepsis and the perfect technic that has always characterized his more capital operations.

Dr. Harris was an example of surgical cleanliness that was a great inspiration to those who came in contact with him in his hospital work, from the orderly to the nurses and interne, as well as to the visiting medical and surgical staff of the William W. Backus Hospital, where he did the most of his

work, having been connected with that institution since its opening in 1893 as visiting surgeon.

He was never known to approach the bedside of a patient ever so trivial that he did not wash up and put on the proper outside apparel for such work. No roadside dust or germs from soiled hands and clothing to be brushed about the uncovered wound was ever associated with any of Dr. Harris's dressing or supervision of dressing while on service. Naturally all such work as this brought good results and was a great incentive to all those concerned.

In certain surgical work Dr. Harris, like other men of genius, excelled in various branches of his main work. External urethrotomy, done without a guide, was quickly and cleverly done with apparent ease; intestinal anastomosis and appendectomy were also specialties in which he excelled. Perhaps the most notable case that Dr. Harris had in his years of work was the operation on Bela Pratt, when he removed some eight feet of gangrenous intestine, with perfect ultimate recovery.

As an operator he was cool, careful and confident, never rattled or excited even in the most trying incidents that may have come up in any severe operation. This self-confidence and absolute lack of fear must have been of great value to him in his career. He was a conservative surgeon of the first water, affectation being the last thing for him, as many a man with the use of a limb can testify.

Personally Dr. Harris was everything that was pleasing, the soul of geniality and hospitality. In his death the public and the medical profession have met with a great loss, but his memory will be kept green and love for him lasting among his friends, patients and professional brethren.

Homer Lycurgus Law, M.D., Hartford.

GEORGE K. WELCH, M.D., HARTFORD.

Homer Lycurgus Law was born in Waterbury, Conn., January 7, 1847, of Connecticut ancestry.

He was educated in the schools of his native city, and in the Cheshire (Conn.) Military Academy. His medical degree was obtained in the Jefferson Medical College, Philadelphia, in 1868. After a hospital experience in Philadelphia he entered the Navy medical service, having never engaged in private practice.

He was commissioned assistant surgeon July 9, 1870, passed assistant surgeon June 19, 1875, and surgeon August 22, 1884. He was in continuous active service from 1870 until December, 1886, when he was retired for ill health.

During these sixteen years his sea and land service was about equal. He served on the Asiatic, European, South American, and Atlantic stations, and was in Arctic waters twice, once on the Greely relief expedition.

Two years after his retirement he made his home in Hartford, and has since retained it.

With the outbreak of the Spanish War in 1898 he was again called to active duty, serving on the receiving ship *Wabash* in Boston harbor.

He was detailed in charge of the Government Exhibit in the Buffalo Exposition in 1901. Since that time he has been on active service in charge of recruiting stations in Buffalo, Boston, Providence, and finally in Hartford. He was on service here until about ten days before his death.

The extra work occasioned by his detachment from the Hartford station, necessitating a hurried trip to Newport, Providence and Boston, when he was not in good physical condition, probably hastened his death. He returned from

Boston to take to his bed, soon became comatose and after a three days' illness, died July 17, 1909.

Twenty-seven years of service in the Navy had given him an over-conscientious conviction of the necessity of obedience to orders; and obedience to his last orders from the Navy Department, when he might reasonably have pleaded inability, presumably shortened his life and made its last week one of great discomfort and fatigue.

In 1874 he married Mary Rose Bixby of Bainbridge, N. Y., and is survived by his wife and one daughter.

Dr. Law was short of stature and rather stockily built; of a ruddy complexion and with the typical physiognomy of "an old sea dog."

He was active in his movements, with a quickness which seemed the expression of surplus energy. This did not apparently diminish as his health became less strong, and he was conducting the examination of recruits with enthusiasm two weeks before his death.

He was in every way helpful and kind-hearted, genial and companionable in disposition, thoroughly interested in the work of the moment whatever it might be, and never happier than when one of a number chatting and telling stories.

Blunt and outspoken, he was easily moved to a fine indignation on occasion; and his emotion was apt to find expression in vigorous Anglo-Saxon. He was, however, quick to see the rights of a case, and if in error, admitted it easily.

He was no Laodicean—he was whole-hearted and enthusiastic in work, in friendship, in helpfulness, in the defense of his opinions.

His fondness for flowers was notable, and he was accustomed each year to send apple blossoms from a tree on the grounds of the Hartford Medical Society to Professor Walker, the former owner of the land.

For many years he was a member of the Executive Committee of the Hartford Medical Society, and during most of this time its chairman. While chairman he gave much thought, time and work for the welfare of the society, the

care of its property and the orderly administration of its affairs. Nothing concerning the society was indifferent to him. He was interested in all that pertained to it—from the discussion of its future welfare to tinkering a refractory lock; from the renewal of the furnace to the elaboration of the annual punch for the loving cup.

Intimate acquaintance revealed many very lovable qualities, and he is greatly missed by those who knew him well.

Matthew Turner Newton, M.D., Suffield.

WILLIAM M. STOCKWELL, M.D., SUFFIELD.

Dr. Matthew Turner Newton was born in Colchester, Conn., June 4, 1829, his parents, Israel and Harriett (Turner) Newton, being of old Revolutionary stock. He received his early training in the district school of Colchester and fitted for college at Bacon Academy. He entered Yale College as a medical student in 1848, and was graduated in 1851 and immediately began the practice of medicine in Salem, Conn.

In 1853 he was elected to represent the town of Salem in the legislature and at the close of the session in July removed to Suffield, where he spent the remainder of his life.

He married on August 15, 1856, Louise A. Austin, eldest daughter of Samuel Austin of Suffield, by whom he had two children, Charles S., who died several years ago, and Emma Louise, who survives him.

At the outbreak of the Civil War he entered the Army and in May, 1861, was commissioned assistant surgeon of the Third Regiment of Connecticut Volunteers, with whom he participated in the first battle of Bull Run. In August, 1861, his regiment was mustered out and on October 4, 1861, he reentered the Army and was commissioned surgeon of the Tenth Regiment of Connecticut Volunteers. He remained in active service until February 17, 1864, when he was compelled to resign on account of ill health. Upon his return from the war, as soon as his health would permit, he engaged in the wholesale tobacco business until 1878, when he resumed the practice of medicine. In 1883 his life was saddened by the death of his devoted wife, who had shared with him the privations of camp life during the war.

In 1893 he was sent to the legislature as the representative of Suffield. He served as chairman of the Committee on

Humane Institutions. It was at this time that he retired from active practice and enjoyed the rest that he so well deserved.

In July, 1893, he married Miss Cornelia P. Pomeroy, who survived him but four days.

Dr. Newton was for many years chairman of the Executive Committee of the Board of Trustees of the Connecticut Literary Institute. He was for twelve years president of the Suffield Savings Bank. He was a director of the Kent Memorial Library and a member of the Military Order of the Loyal Legion. In Masonic circles Dr. Newton was a familiar figure. He was a member of Apollo Lodge, Washington Chapter and Suffield Council of this place, and Washington Commandery, K. T., and Sphinx Temple, A. A. O. N. M. S., of Hartford.

He was also a member of the Second Baptist Church of this place.

I know of no more fitting tribute to Dr. Newton than the following editorial in the *Hartford Times* at the time of his death in June.

The passing of a country doctor—an old-time physician who leaves a strong impress on the community in which he has lived, and who has been one of the established institutions of the town—is always a sad event for the *Times* to chronicle. Anecdotes and traditions concerning the part which the country doctor has played in the development of Connecticut have been celebrated in song and story. The death of Dr. Matthew T. Newton of Suffield, at the ripe age of four score years, marks the final chapter in the career of a gifted Connecticut practitioner. He was more than a mere Doctor of Medicine—he was a force who influenced the community, and who in addition to carrying skill and cheer into the sick room, was prominent in the social and church life of the town in which he lived for more than half a century and by which he was honored and loved.

Dr. Newton's mental equipment was broad and effective. He possessed a rugged and ready wit which became more subtle and keen when he joined in the social gatherings of his neighbors, but which carried no sting. With his professional attainments he combined a deep knowledge of human nature and rare personal charm. His death removes from Suffield a man who did his life work well and who will be missed by individuals, families and the community.

Lewis Sloat Paddock, M.D., Norwich.

PATRICK CASSIDY, M.D., NORWICH.

On December 10, 1829, there was born in Norwich, Conn., a boy who received from Heaven, at the baptismal font, the name of Lewis Sloat, and from his parents that of Paddock. The air which the newborn breathed was impregnated with the sanctity of a Christian home, and with that which remained the great characteristic of his life, love of God, his church, his country, his city, and the high dignity of the profession of his choice. Never breathed a more sincere or less ostentatious upholder of the principles of medical etiquette than this gifted man, especially so far as related to the alleviation of the mental and physical ills of his fellowmen, in the pursuit of which he sacrificed his private means, his time and his health.

The ancestry of Lewis S. Paddock is an old New England one. His father, Rev. Seth Birdsey Paddock, was a native of Middletown, Conn., and rector of Christ Episcopal Church of this city from 1822 to 1844, when he went to Cheshire, Conn., to assume the duties of principal of the Cheshire Academy, which in those days was an institution of great repute and a place that was dear to him, as it was in Cheshire when a young man that he found the wife of his choice, Emily Flagg. From this union eight children were born, two of whom chose the calling of their father and were elevated to the dignity of bishops, one the Bishop of Washington Territory, and the other Bishop of Massachusetts.

Dr. Paddock received his early education in the primary schools of Norwich. At the age of fifteen he entered Cheshire Academy and there prepared for college, graduating from Trinity, Hartford, in 1850. Choosing the medical profession for his life's work, he selected the New York Medical College for his Alma Mater, from which institution he graduated in

1854. After one year's service in the Bellevue Hospital he returned to Norwich, where uninterruptedly he practiced until his death, which occurred June 24, 1909.

In this age of show and meretriciousness, it is difficult to appraise the merits of Dr. Paddock. If by merit is understood to have the power and faculty of representing in glowing and impressive words the great skill and care exercised to avert the danger of the most common disease, no physician was ever more inadequately equipped. His style was destitute of this adornment. It was accuracy, truth, terseness of professional honesty, combined with simplicity, and as a physician he served the people with zeal, fidelity, and ability worthy of emulation, and his memory will be revered long by the profession and laity of the community.

In 1862 he married Mary Elizabeth Addoms, daughter of William and Margaretta Lawrence Addoms of Brooklyn, N. Y., The ceremony was solemnized by his two bishop brothers. From this union two children were born, Margaretta Lawrence and Mary Huntington, who together with Mrs. Paddock survive. Margaretta married Edwin C. Johnson of this city.

Dr. Paddock, although a highly spirited citizen, taking great interest in public affairs, never sought nor would accept any political office, except to act as a member of the Board of Education, in which capacity he served many years, taking great interest in public education until the end of his life.

His professional life was diametrically the reverse of this; here he was actively associated with every organization connected with his calling which had for its object the advancement of medical knowledge—national, state, county, and city—in all of which his ability was recognized by his professional brethren, who elevated him to many offices of trust. He was the first to get the appointment of pension examiner, which he held for many years. He was, until his death, the medical examiner for many of the more important life insurance companies, and was consulting surgeon and physician to the W. W. Backus Hospital from its founding until his demise. He was the first under the present law to be appointed medical exam-

iner of this town, which duties he performed until his death, and it necessitated medico-legal knowledge of the highest order, of which Dr. Paddock was truly master. There was no criminal trial in this country which involved a medico-legal subject, during the forty-five years last past, that he was not employed as a witness for the prosecution or defense. He was well prepared on the subject and his testimony was clear, concise, reliable and, being unbiased, carried conviction to the court and jury.

He was associated with the writer for many years as health officer with risk to self and family, during which time the safety of the comonwealth was well guarded against three serious epidemics of smallpox. He recognized the great need of more accommodations for the unfortunate insane than Middletown offered. He with other citizens petitioned the legislature for the establishment of a hospital in Norwich, and in support of this petition, in April, 1897, went to Hartford and appeared before the legislative committee, urging its erection, and that Norwich was the proper place for it, and lodged with the General Assembly, May 12, 1897, a guarantee, signed by many citizens, that the site would be a gift to the State, and Dr. Paddock's name was the second on the list.

When the first Napoleon, withering alone in exile, was told by an attendant about his greatness, he smiled and said, "No man is great who has not the love of his fellowmen. My career has inspired fear but not love. Human respect is often rendered to success, but the heart of the people is given to the good only."

If I am asked what was the sovereign trait of Dr. Paddock's life, my answer is that of Napoleon's definition of greatness, the love of all classes of his fellow citizens, which was manifested by his professional brethren by an appropriate address, and a material reminder on the occasion of his fiftieth anniversary in the profession. Their profound sorrow at his demise was well demonstrated by their attendance at his bier, together with the vast concourse of all classes of the citizens who assembled to pay their last tribute of respect to one who

had gained their love by sweet fatherly familiarity, happily blended with dignity and charm, which are to be found in the true type of Christian gentleman. His life was as saintly as his knowledge of the healing art was splendid, and at the end he bore the great physical suffering which it was his lot to endure, with that true heroism which utters no sigh nor word of complaint. Through life, as at the end, he sought for higher things than this world can give, and we sincerely pray that he has now found them, that his sleep in God is sweet, and his crown resplendent.

Durell Shepard, M.D., West Haven.

JOHN FREDERICK BARNETT, M.D., WEST HAVEN.

Dr. Durell Shepard was a descendant of Edward Shepard, one of the original settlers of Cambridge, Mass. The doctor's father, Hiram Shepard, was born in Newtown, Conn., was highly esteemed and became well known as a veterinary surgeon and a successful farmer. He died in his seventy-sixth year. The subject of this sketch was born in Newtown, September 19, 1831. Dr. Shepard's preliminary education was in the public schools of his native town and at Wilbraham (Massachusetts) Academy. When sixteen years of age he left the latter institution resolved to pursue a higher course of study and if possible obtain a profession. In 1852 he matriculated at Yale, but feeble health—which pursued him throughout his whole life—and pecuniary difficulties interrupted his studies and postponed his graduation as Doctor of Medicine till 1864. During college attendance the doctor supported himself, working in factories and doing what other labor he could find, all the while handicapped by impaired health, and it was only by indomitable energy and great self-denial that he gained the degree he so much coveted. When the Civil War broke out Shepard followed his patriotic impulses and enlisted in Company F, Connecticut Heavy Artillery. His faithfulness and gallantry were recognized during his early service. Fortune of war made him a prisoner at the battle of Cold Harbor in 1862. During his confinement at Savage Station, the enemy, in recognition of his medical attainments, assigned him to the care of the sick and wounded; but a month after his capture he was paroled and exchanged. Following orders, the doctor now performed hospital duties at Philadelphia, but his feeble health not being equal to the strain, he was honorably discharged from the Army in November, 1862.

Coming North after a short period of rest, Shepard reentered the Yale Medical School to resume his professional studies, and obtained his degree in 1864.

After a brief attempt at private practice in Bridgeport, his health being now somewhat restored, the doctor reënlisted as assistant surgeon, but in 1865 resigned army service and took up private practice. After a short stay at Ballston Spa, N. Y., he came to West Haven, where he resided as a practising physician till his death, May 16, 1909. In 1867 he opened a drug store in connection with his professional work and this venture was successful and prosperous from the start.

The doctor was twice married: in 1856 to Miss Ellen Hart of Southington, Conn., and some years after her death to Eleanor M. Tyler, of Essex, Conn. One child, now deceased, was the issue of the first marriage and four of the second. Only two survivors of his whole family are now living, both residing in West Haven.

He was a past master of the Masonic order and was a member in good standing of the Connecticut State and New Haven County Medical societies.

The doctor was a man of sterling character, very conservative and of a modest and retiring nature. Heroic treatment did not appeal to him, nor did he ever attempt to advertise himself by brilliant departures from the beaten path. In every way he represented one of the best types of the family doctor. His sincerity and attainments commanded respect and the considerable practice he established was largely the result of the faith he inspired in his patients. As a wise and experienced guide when sickness afflicted families under his care, impending death was often averted by his good judgment and skill. Outspoken for what he thought to be right, he had no patience with charlatanism in any form. He earned the high esteem in which he was held in the community and with his patients by faithful work and self-denial. It is to be regretted that poor health throughout his whole life limited his work and activities. For four or five years preceding his death the

doctor could not respond to outside calls, but his office was generally filled by those who loved the man and valued his counsel and advice.

Emphysema and chronic bronchitis were given as the cause of death.*

* I am indebted to *Biographical Records, N. H. County*, for many of the above facts.

Philo William Street, M.D., Suffield.

WILLIAM M. STOCKWELL, M.D., SUFFIELD.

Dr. Philo W. Street was born in South Hadley Falls, Mass., September 25, 1865, the only son of Hobart P. and Caroline V. Street.

He prepared for college in the Springfield Collegiate Institute and attended the University of Vermont, where he graduated as valedictorian of his class in 1891. He took a postgraduate course and hospital service in New York City.

In 1893 he went to Lebanon, Conn., where he practiced for one year. In the spring of 1894 he removed to Suffield, to take up the practice of the late Dr. Newton. June 30, 1893, he married Sarah Barber of Lebanon, who with three children, Amy, Katherine and Russell, survive him.

Dr. Street in politics was a republican, always public spirited and an untiring worker for any cause that he believed to be for the welfare of the public. He has held several town offices and was a member of the school board for twelve years. It was during his administrations as chairman of the school board the schools were consolidated and the old district system abolished. For several years he was a member of the board of directors of the Kent Memorial Library of Suffield.

As a physician he was exceptionally successful; a keen diagnostician, a very careful observer, and kept in touch with the latest methods of treatment. In May 1894 he was appointed health officer and during his term of office effected many sanitary improvements. He was a member of the committee which originated "Forms and Rules for the Prevention of Spread of Contagious Diseases," adopted by the State Board of Health.

His paper, read before the Connecticut State Medical Society in May 1902, showed much original ability and created favorable comment.

In May 1904 on account of ill health he was obliged to give up his practice and spent about one year abroad. He never fully regained his health and had been able to practice but little since.

Dr. Street was a member of Suffield Lodge of Knights of Pythias and the Apollo Lodge of Masons.

He was a member of the First Congregational Church of Suffield.

By the death of Dr. Street Suffield loses one of her most respected citizens and the medical profession one of its most loyal members. Always faithful to his patients and his profession, never saving himself, his death can be placed in the same list with so many others who have sacrificed themselves for their profession.

Samuel Benedict St. John, M.D., Hartford.

FRANK L. WAITE, M.D., HARTFORD.

On the morning of December 21, 1909, we were all deeply shocked to learn that Dr. Samuel St. John had passed away.

Apparently in the full vigor of life, he came to the office on December 20, and while there was seized with a pain in the region of the heart, and at the suggestion of his physician returned to his home. The pain continued to some extent all the afternoon and evening, but he retired that night without the least apprehension and with the determination of resuming his work the next day. In the night his family were awakened to find that he had expired during sleep.

What a beautiful end to a life full of honor and activity! No weary days of waiting for the end, but to-day fulfilling all the duties of life and to-morrow taking up the life in the great beyond!

Dr. Samuel Benedict St. John was born in Hudson, Ohio, July 24, 1845, the son of Samuel and Amelia Palmer Curtis St. John, and was of Revolutionary ancestry.

His father, Dr. Samuel St. John, was a professor in the Western Reserve College of Ohio, and later in the Cleveland Medical College; subsequently he was professor of chemistry in the College of Physicians and Surgeons of New York for twenty years.

Samuel Benedict St. John received his early education in the public schools of Cleveland, Ohio, and New Canaan, Conn., and then entered Yale College, where he graduated in the class of 1866. He then studied at the Columbia College of Physicians and Surgeons of New York, and in 1870 graduated with the degree of Doctor of Medicine.

Dr. St. John served on the house staff of Bellevue Hospital from April, 1870, to October, 1871, and was appointed the first house surgeon in the Manhattan Eye and Ear Hospital.

From 1872 to 1874 he pursued the study of his specialty in the clinics of Berlin, Vienna, Paris and London. Returning to New York, he was assistant demonstrator of anatomy and instructor in chemistry at the College of Physicians and Surgeons, and also surgeon to the Northwestern Dispensary. In 1878, he removed to Hartford, and soon became one of the leading ophthalmologists of Connecticut.

Dr. St. John had been a prominent member of many medical societies. He was secretary of the American Ophthalmological Society for twenty years, from 1888 to 1908, and was president of this society in 1909. He was president of the New York Ophthalmological Society in 1891, and of the New England Ophthalmological Society of Boston in 1896.

Dr. St. John was a member of the Hartford City Medical Society, and was president in 1900; of the Hartford County Medical Society, and was president of the latter in 1904. He was a fellow of the New York Academy of Medicine, and a member of the American Otological Society.

He had been surgeon to the Hartford Hospital since 1896, and consulting surgeon to St. Francis Hospital since its organization in 1897. In 1882 he was appointed instructor in ophthalmology in Yale Medical School and continued to occupy this position until 1905, or twenty-three years.

In 1882 Dr. St. John married Mary Harris Morgan, the daughter of Nathaniel H., and Harriet Morgan, who survives him with two daughters, Miss Elsa M. and Miss Helen C. St. John.

Dr. St. John was respected and his ability recognized, not only by physicians of Hartford and vicinity, but by the leading members of the profession throughout the country; and this is not surprising when one considers the character of the man, his excellent preparation and his extensive work.

He contributed many papers on medical subjects, but mostly pertaining to ophthalmology. In 1872 an article appeared in the *American Journal of Medical Sciences* on "Plastic Apparatus and Surgery," by S. B. St. John, M.D., which established the fact that he was first to use plastic apparatus for fracture

of the clavicle, fracture of the ribs, etc., and which proved to be the initial step to the valuable improvement in surgical science known as the "plastic jacket."

Another paper, entitled "Restoration of the Upper Lid by a Pelicle Flap Taken from Below the Lower Lid," was read before the American Ophthalmological Society in 1893, and the method is favorably mentioned in Oliver and Norris' "System of Ophthalmology."

Dr. St. John possessed to a remarkable degree the many virtues which enter into the character of a good man and a true physician. He was by nature manly and courageous, kind and considerate of others; a man of few words, but those who knew the doctor intimately knew the value of his words, the sincerity of his purpose, the kindness of his nature, and the goodness of his heart.

So quietly and without conceit or show was all his work done that it is only by looking back over years of his professional life that we can gain an idea of the great amount or the variety and excellence of that work. He loved the practice of his specialty and gave unstintingly of his time and skill, irrespective of the circumstances or chances of remuneration.

Many are the expressions of sorrow which we hear coming from patients in all walks of life, showing to what extent the doctor had gained not only the respect but the love of many; and what reward is more valuable?

As I look back over almost twenty years of daily association with the doctor, I could write almost indefinitely, if I cared to go into the many shades of his character, for it was my privilege to know him as few knew him, to admire his uprightness, his noble simplicity, and his devotion to duty, and I shall always treasure the memory of those years.

In the death of Dr. Samuel St. John this society has lost a valued member and many of us one of the most cherished of friends.

MEMBERS OF THE CONNEC-
TICUT STATE MEDICAL
SOCIETY.

MEMBERS OF THE SOCIETY.

HONORARY MEMBERS.

WILLIAM MCCOLLOM.....	Brooklyn, N. Y.
AGRIPPA NELSON BELL.....	Brooklyn, N. Y.
JOHN SHAW BILLINGS.....	New York City, N. Y.
THOMAS ADDIS EMMETT	New York City, N. Y.
WILLIAM HENRY WELCH.....	Baltimore, Md.
ROBERT FULTON WEIR.....	New York City, N. Y.
SIR JOSEPH LISTER.....	London, England.
EDWARD G. JANEWAY.....	New York City, N. Y.
HON. CHARLES E. GROSS.....	Hartford, Conn.
DAVID WEBSTER.....	New York City, N. Y.
SIR JAMES GRANT.....	Ottawa, Canada.
HENRY O. MARCY.....	Boston, Mass.
T. MITCHELL PRUDDEN.....	New York City, N. Y.
WILLIAM W. KEEN.....	Philadelphia, Penn.
JAMES W. MCLANE.....	New York City, N. Y.
FREDERICK HOLME WIGGIN.....	New York City, N. Y.
J. W. S. GOULEY.....	New York City, N. Y.
REYNOLD WEBB WILCOX.....	New York City, N. Y.
WILLIAM OSLER.....	Oxford, England.
GEORGE M. STERNBERG.....	Washington, D. C.
FRANCIS DELAFIELD.....	New York City, N. Y.
MAURICE H. RICHARDSON.....	Boston, Mass.

ACTIVE MEMBERS.

The names of those who have been Presidents are in capitals.

HARTFORD COUNTY.

HERMANN STROSSER, M.D., New Britain, *President*.

HARMON G. HOWE, M.D., Hartford, *Vice President*.

FREDERICK B. WILLARD, M.D., Hartford, *Secretary and Treasurer*.

Councilor—OLIVER C. SMITH, M.D., Hartford.

Censors—EDWARD G. FOX, M.D. EDWARD R. LAMPSON, M.D.

HENRY A. DEANE, M.D.

Annual Meeting, First Tuesday in April; Semi-Annual Meeting,
Fourth Tuesday in October.

Hartford:

Nathan Mayer.....	904 Main Street.
David Crary	926 Main Street.
John B. Lewis.....	700 Main Street.
Gustavus P. Davis.....	700 Main Street.
Charles E. Froelich.....	125 Oakland Terrace.
Harmon G. Howe.....	137 High Street.
William W. Knight.....	254 Trumbull Street.
Thomas D. Crothers.....	142 Fairfield Avenue.
George L. Parmele.....	36 Pearl Street.
Ellen H. Gladwin.....	705 Asylum Avenue.
Frederick S. Crossfield.....	75 Pratt Street.
Marcus M. Johnson.....	122 Woodland Street.
William D. Morgan.....	49 Pearl Street.
John F. Axtelle.....	635 Main Street.
George K. Welch.....	26 State Street.
Phineas H. Ingalls.....	49 Pearl Street.
Edward K. Root.....	49 Pearl Street.
John Howard.....	331 Trumbull Street.
Charles D. Alton.....	75 Pratt Street.
Oliver C. Smith.....	44 High Street.
Joseph E. Root.....	67 Pearl Street.
William Porter, Jr.....	179 Allyn Street.

Frederick T. Simpson.....	122	High Street.
George R. Miller.....	51	Church Street.
Charles C. Beach.....	125	Trumbull Street.
Gideon C. Segur.....	67	Farmington Avenue.
George C. Bailey.....	65	Church Street.
Alva E. Abrams.....	36	Pearl Street.
Charles E. Taft.....	98	High Street.
Thomas F. Kane.....	517	Main Street.
Arthur J. Wolff.....	904	Main Street.
Ansel G. Cook.....	179	Allyn Street.
Edwin A. Down.....	902	Main Street.
Daniel F. Sullivan.....	64	Church Street.
EVERETT J. McKNIGHT.....	110	High Street.
Benjamin S. Barrows.....	164	High Street.
Michael A. Bailey.....	434	Main Street.
George N. Bell.....	44	High Street.
Frank L. Waite.....	68	Pratt Street.
Charles S. Stern.....	75	Pratt Street.
Franklin L. Lawton.....	295	Main Street.
John H. Rose.....	75	Pratt Street.
John B. Waters.....	281	Trumbull Street.
Joseph B. Hall.....	36	Pearl Street.
Edward O. Elmer.....	805	Park Street.
Janet M. Weir.....	282	Sigourney Street.
John F. Dowling.....	1315	Main Street.
Philip D. Bunce.....	98	High Street.
Wilton E. Dickerman.....	125	Trumbull Street.
John B. Boucher.....	25	Charter Oak Avenue.
Levi B. Cochran.....	50	Farmington Avenue.
James H. Naylor.....	3	Main Street.
Charles P. Botsford.....	1337	Main Street.
James H. Standish.....	340	Windsor Avenue.
Michael H. Gill.....	36	Pearl Street.
John B. McCook.....	390	Main Street.
John W. Felty.....	902	Main Street.
Thomas W. Chester.....	110	High Street.
Joseph A. Kilbourn.....	271	Park Street.
Thomas B. Enders.....	3	Highland Street.
Charles A. Goodrich.....	5	Haynes Street.
Alfred M. Rowley.....	53	Main Street.
Irving DeL. Blanchard.....	73	Windsor Avenue.
Emil G. Reinert.....	109	Ann Street.
Heman A. Tyler, Jr.....	686	Main Street.
Frederick L. McKee.....	68	Pratt Street.

Edward R. Lampson.....	125	Trumbull Street.
E. Terry Smith.....	36	Pearl Street.
William H. Fitzgerald.....	904	Main Street.
Emma J. Thompson.....	287	Trumbull Street.
Patrick J. Ryan.....	316	Park Street.
Walter R. Steiner.....	4	Trinity Street.
Ellen P. O'Flaherty.....	140	Main Street.
Marion W. Williams.....		Farmington.
Allen H. Williams.....	904	Main Street.
C. Brewster Brainard.....	904	Main Street.
Eckley R. Storrs.....	179	Allyn Street.
Ernest A. Wells.....	2	Garden Street.
William H. Van Strander.....	61	Church Street.
James H. Conklin.....	89	Pratt Street.
Orin R. Witter.....	44	High Street.
Michael R. Laden.....	11	Buckingham Street.
Frederick Buell Willard.....	80	Church Street.
Francis Arthur Emmett.....	1295	Main Street.
Henry Ely Adams.....	194	High Street.
William T. Owens.....	397	Capitol Avenue.
John C. Pierson.....	50	Windsor Avenue.
Henry F. Stoll.....	75	Pratt Street.
Paul P. Swett.....	803	Main Street.
Charles J. Fox.....	36	Pearl Street.
Mark S. Bradley.....	36	Pearl Street.
Harry C. Clifton.....	98	High Street.
Robert S. Starr.....	75	Pratt Street.
Arthur C. Heublein.....	110	High Street.
Whitefield N. Thompson.....	30	Washington Street.
Annabelle K. Davenport.....		San Francisco.
Maude W. Taylor.....	107	Edwards Street.
James J. Boucher.....	429	Capitol Avenue.
Isaac W. Kingsbury.....	36	Pearl Street.
Edward J. Turbert.....	18	New Park Avenue.
Patrick F. McPartland.....	1341	Main Street.
Thomas F. Welch.....	356	Windsor Avenue.
James C. Wilson.....	164	High Street.
Preston M. Edwards.....	11	Winter Street.
Robert L. Rowley.....	98	High Street.
William H. Crowley.....	15	Charter Oak Avenue.
Edward A. Hotchkiss.....	65	Windsor Avenue.
Horace C. Swan.....	11	Lincoln Street.
Otto G. Wiedman.....	377	Albany Avenue.
Thomas N. Hepburn.....	42	High Street.

Henry A. Martelle.....	112 High Street.
Charles T. Beach.....	686 Main Street.
Edward H. Blair.....	389 Main Street.
James W. Ward.....	437 Capitol Avenue.
George F. Vail.....	36 Pearl Street.
Clarence M. Hatheway.....	110 High Street.
Albert R. Keith.....	43 Farmington Avenue.
Joseph P. Ryan.....	44 Church Street.
Arthur H. Griswold.....	148 Church Street.
David J. Molumphy.....	417 Main Street.
Morris Tuch.....	16 Village Street.
John Bagg Griggs.....	772 Asylum Avenue.
Andrew Mansergh Outerson.....	104 Church Street.
Charles Herbert Borden.....	36 Pearl Street.
James Francis Rooney.....	308 Park Street.
Hugh Francis Flaherty.....	305 Park Street.
George Arthur Smith.....	50 Farmington Avenue.
Henry Bickford.....	111 Ann Street.
Paul Waterman.....	44 High Street.
William Bradford Bartlett.....	148 High Street.
Howard Bulkley Haylett.....	158 High Street.
Domenico DeBonis.....	94 Windsor Avenue.
Calvin Weidner	904 Main Street.
Jeremiah E. McSweeney.....	207 Main Street.
John C. Rowley.....	50 Farmington Avenue.
Richard J. Dwyer.....	186 Franklin Avenue.
Edward J. Whalen.....	247 Park Street.
Paul Plummer.....	68 Pratt Street.
William E. McClellan.....	125 Trumbull Street.

Berlin—EAST BERLIN :

Thomas C. Hodgson.

Bloomfield:

Thomas H. Denne.

Bristol:

William W. Horton.
 Arthur S. Brackett.
 William M. Curtis.
 Herbert D. Brennan.
 Benedict N. Whipple.
 Timothy G. O'Connell.

Canton—COLLINSVILLE :

George F. Lewis.
 Ralph B. Cox.
 George W. Eddy.
 Sheldon S. S. Campbell.

East Hartford:

Thomas S. O'Connell.
 Walter G. Murphy.
 Franklin H. Mayberry.

East Windsor—BROAD BROOK :

Howard O. Allen.
 Harold S. Backus.

Enfield—THOMPSONVILLE:

Edward F. Parsons.
 George T. Finch.
 Henry G. Varno.
 Michael J. Dowd.
 John L. Bridge.
 Thomas Grant Alcorn.

HAZARDVILLE:

Simon W. Houghton.

Farmington—Unionville:

Michael J. Morrissey.

Granby:

Rollin D. Chatfield.

Glastonbury:

Charles G. Rankin.
 William S. Kingsbury.

SOUTH GLASTONBURY:

Henry M. Rising.
 Harry B. Rising.

Manchester:

Francis H. Whiton.
 Harry R. Sharpe.

SOUTH MANCHESTER:

William R. Tinker.
 Thomas H. Weldon.
 William S. Gillman.
 Noah A. Burr.
 Thomas G. Sloan.
 George W. May.

New Britain:

George Clary.
 Erastus P. Swasey.
 Michael J. Coholan.
 Lawrence M. Cremin.
 Samuel W. Irving.
 Robert M. Clark.
 Hermann Strosser.
 Arvid Anderson.

Kenneth E. Kellogg.
 Edward L. Whittemore.
 Thomas E. Reeks.
 Ernst T. Fromen.
 Catherine H. Travis.
 Theodore G. Wright.
 Charles A. Gillin.
 Julius Hupert.
 Maurice W. Maloney.
 George Houghton Bodley.
 John Purney.

Newington:

Julius E. Griswold.

Plainville:

John N. Bull.

Rocky Hill:

Orin A. Moser.

Simsbury:

John P. Carver.

TARIEFFVILLE:

Charles M. Wooster.

Southington:

Willard G. Steadman.
 William R. Miller.

South Windsor:

Mary S. Tudor.
 Henry A. Deane.

Suffield:

Joseph A. Gibbs.

WEST SUFFIELD:

William E. Caldwell.

West Hartford:

Charles O. Purinton.
 Edwin B. Lyon.
 Ralph W. E. Alcott.
 Frank J. Ronayne.

Wethersfield:

Edward G. Fox.
 Arthur W. Howard.
 Bartholomew F. Donahue.

Windsor:

Howard F. King.

Windsor Locks:

Joseph A. Coogan.
 William J. Coyle.
 Myron P. Robinson.

Total Number, 213.

NEW HAVEN COUNTY.

FRANK N. LOOMIS, M.D., Derby, *President*.

NELSON A. POMEROY, M.D., Waterbury, *Vice President*.

WILLIAM S. BARNES, M.D., *Secretary and Treasurer*.

Councilor—WILLIAM H. CARMALT, M.D., New Haven.

Censors—E. M. McCABE, M.D.

F. G. GRAVES, M.D.

E. W. PIERCE, M.D.

Annual Meeting, Third Thursday in April; Semi-Annual, Third Thursday in October.

New Haven:

A. E. Winchell.....60 Pearl Street.
 Arthur Ruickoldt.....71 Olive Street.
 Frederick Bellosa.....209 Orange Street.
 W. H. CARMALT.....87 Elm Street.
 T. H. Russell.....137 Elm Street.
 F. H. Whittemore.....69 Elm Street.
 C. P. Lindsley.....28 Elm Street.
 H. Fleischner.....928 Grand Avenue.
 M. Mailhouse.....45 Elm Street.
 M. C. O'Connor.....882 State Street.
 Charles E. Park.....42 Elm Street.
 Gustavus Eliot.....209 Church Street.
 J. E. Stetson.....106 High Street.
 J. F. Luby.....1210 Chapel Street.
 William W. Hawkes.....35 High Street.
 Frank H. Wheeler.....27 Perkins Street.
 Herbert E. SmithMedical College.
 Benjamin L. Lambert.....578 Howard Avenue.
 F. W. Wright.....48 Pearl Street.
 Edward K. Roberts.....244 Grand Avenue.
 Oliver T. Osborne.....252 York Street.
 Lucy C. Peckham.....141 Greene Street.

Louis S. DeForest.....	335	Orange Street.
Henry L. Swain.....	232	York Street.
Mary B. Moody.....		Sherland Avenue, cor. E. Grand Avenue.
G. F. Converse.....	1	Whalley Avenue.
J. H. Townsend.....	62	Trumbull Street.
C. J. Foote.....	26	Elm Street.
S. J. Maher.....	212	Orange Street.
Jay W. Seaver.....	25	Lynwood Place.
Louis B. Bishop.....	356	Orange Street.
H. W. Ring.....	187	Church Street.
W. C. Welch.....	44	College Street.
A. O. Baribault.....	209	Chapel Street.
Edward M. McCabe.....	278	Orange Street.
James M. Reilly.....	337	Cedar Street.
Clarence E. Skinner.....	331	Temple Street.
N. R. Hotchkiss.....	219	York Street.
Benjamin A. Cheney.....	404	Whitney Avenue.
Charles A. Tuttle.....	196	York Street.
Harry B. Ferris.....	395	St. Ronan Street.
Leonard W. Bacon.....	113	Whitney Avenue.
Paul S. Robinson.....	164	Grand Avenue.
Arthur N. Alling.....	257	Church Street.
R. A. McDonnell.....	1142	Chapel Street.
E. P. Pitman.....	52	Sylvan Avenue.
Isaac N. Porter.....	198	Dixwell Avenue.
Ernest H. Arnold.....	46	York Square.
Robert E. Peck.....	56	Howe Street.
William C. Wurtenberg.....	28	Elm Street.
C. S. Lamb.....	776	Howard Avenue.
Frederick N. Sperry.....	33	College Street.
William F. Verdi.....	13	Elm Street.
Charles J. Bartlett.....	209	York Street.
Morris D. Slatery.....	566	Howard Avenue.
Ward H. Sanford.....	60	Edwards Street.
William M. Kenna.....	1161	Chapel Street.
Leonard C. Sanford.....	347	Temple Street.
Willis H. Crowe.....	106	Whalley Avenue.
Charles H. Robbins.....	326	Grand Avenue.
Louis M. Gompertz.....	1195	Chapel Street.
Alfred G. Nadler.....	377	Orange Street.
Frederick C. Bishop.....	1241	Chapel Street.
James H. Flynn.....	840	Howard Avenue.
Frank A. Kirby.....	235	Dixwell Avenue.
William J. Sheehan.....	1226	Chapel Street.

John F. Sullivan.....	205	Blatchley Avenue.
Edward F. McIntosh.....	192	York Street.
Nicola Mariani.....	119	Greene Street.
James S. Maher.....	215	Orange Street.
Percy D. Littlejohn.....	193	York Street.
A. W. Marsh.....	1012	Whalley Avenue.
William N. Winne.....	1020	Whalley Avenue.
William S. Barnes.....	22	College Street.
Clarence L. Kilbourn.....	202	Blatchley Avenue.
Henry H. Smith.....	43	Elm Street.
Julia E. Teele.....	206	Hamilton Street.
Harry L. Welch.....	44	College Street.
Otto G. Ramsay.....	251	Church Street.
Thomas V. Hynes.....	27	College Street.
Harry M. Steele.....	226	Church Street.
Willis E. Hartshorn.....	1138	Chapel Street.
Richard F. Rand.....	246	Church Street.
Edward S. Moulton.....	204	York Street.
Timothy Francis Cohane.....	486	Howard Avenue.
William James Butler.....	712	Howard Avenue.
David Bercinsky.....	360	George Street.
T. S. McDermott.....	1334	Chapel Street.
Francis H. Reilly.....	296	Columbus Avenue.
Nelson A. Ludington.....	96	Park Street.
Dwight M. Lewis.....	193	York Street.
Seymour L. Spier.....	348	Crown Street.
William H. Bean.....	40	Pleasant Street.
E. Reed Whittemore.....	69	Elm Street.
Alice P. Ford.....	1302	Chapel Street.
Frances N. Boynton.....	46	York Square.
Frank B. Standish.....	310	Elm Street.
Carl W. Henze.....	22	Trumbull Street.
Eugene M. Blake.....	257	Church Street.
George Blumer.....	64	Trumbull Street.
Rollin McNeil.....	149	Bradley Street.
Archibald C. Herbert.....	226	York Street.
Mary P. Dole.....	15	Elm Street.
Treby W. Lyon.....	410	Dixwell Avenue.
Frederick P. Lane.....	524	Chapel Street.
Harold S. Arnold.....	199	York Street.
Allen R. Diefendorf.....	199	York Street.
William J. Barrett.....	63	Olive Street.
Herman P. Hessler.....	323	George Street.
Millard F. Allen.....	65	Dixwell Avenue.

Frederick G. Beck.....	199 York Street.
Raynham Townshend.....	233 Church Street.
Jeremiah J. Cohane.....	342 Grand Avenue.
Frank L. Phillips.....	196 York Street.
Charles Fitzgerald.....	220 Orange Street.
Charles E. Sanford.....	150 Shelton Avenue.
John A. Murphy.....	28 Edwards Street.
James F. Rogers.....	378 George Street.
Samuel J. Goldberg.....	314 George Street.

Ansonia:

Louis E. Cooper.
 Louis H. Wilmot.
 Edward K. Parmelee.
 Burton I. Tolles.

Branford:

C. W. Gaylord.
 A. J. Tenney.

Cheshire:

Edward W. Karrman.

Derby:

F. N. Loomis.
 E. T. Sharpe.
 Royal W. Pinney.
 Edward O'R. Maguire.
 Stephen F. Donovan.
 Frank A. Elmes.
 Wm. H. Treat.
 M. A. Parlato.

East Haven:

Charles W. Holbrook.

Guilford:

George H. Beebe.

Hamden:

Walter S. Lay.

MOUNT CARMEL:

George H. Joslin.

Madison:

Milo P. Rindge.

Meriden:

N. Nickerson.
 A. W. Tracey.
 E. T. Bradstreet.
 J. D. Eggleston.
 Edward W. Smith.
 Ava H. Fenn.
 E. W. Pierce.
 S. D. Otis.
 F. P. Griswold.
 E. D. Hall.
 H. A. Meeks.
 William Galvin.
 Joseph A. Cooke.
 Louis F. Wheatley.
 Michael J. Sullivan.

Milford:

E. C. Beach.
 John W. Ives.
 Dean C. Bangs.

Naugatuck:

Thomas M. Bull.
 William J. Delaney.
 Edwin H. Johnson.
 John J. Carroll.
 Walter A. Reilly.
 James W. Robbins.

North Haven:

R. B. Goodyear.
Gould S. Higgins.

Orange—WEST HAVEN:

J. F. Barnett.
Charles D. Phelps.
Victor A. Kowalewski.
Joseph S. Gilmore.

Seymour:

Frank A. Benedict.
Elias W. Davis.

Stony Creek:

Emmett J. Lyman.

Wallingford:

J. D. McGaughey.
William S. Russell.
William P. Wilson.
Caroline North Stevens.
David R. Lyman.
John H. Buffum.

Waterbury:

F. E. Castle.
Walter L. Barber.
C. W. S. Frost.
CHARLES S. RODMAN.
J. M. Benedict.
Carl E. Munger.
Bernard A. O'Hara.
John F. Hayes.
Augustin A. Crane.
Patrick T. O'Connor.
John D. Freney.
Charles A. Hamilton.
George O. Robbins.
Charles H. Brown.
Edward W. Goodenough.
Myron L. Cooley.
Frederick G. Graves.
James L. Moriarty.

George W. Russell.
Daniel J. Maloney.
Charles A. Monagan.
H. G. Anderson.
Henry E. Hungerford.
Nelson A. Pomeroy.
T. J. Lally.
Patrick J. Dwyer.
Louis J. Thibault.
William A. Goodrich.
John E. Farrell.
Charles Engelke.
Thomas J. McLarney.
Dudley B. Deming.
Andrew C. Swenson.
Thomas E. Parker.
Michael J. Donahue.
Egbert L. Smith.
John H. Dillon.
John J. Gailey.
Isabel Cowan.
Arthur Variell.
Aletta L. Bedford.
Theodore F. Bevans.
Harold E. Hoyt.
Arthur F. McDonald.
Jacob Gancher.
Henry K. Hine.
James A. Grady.
Michael J. Lawlor.
Edmund Russell.
John W. Fruin.
Walter L. Barber, Jr.
Thomas F. Healey.
Arthur S. Grant.
Louis F. Cassidy.
John E. Brennan.
John F. Hackett.
Patrick J. Brennan.

Waterville:

Joseph S. Holroyd.

Total Number, 231.

NEW LONDON COUNTY.

GEORGE H. JENNINGS, M.D., Jewett City, *President*.

PATRICK J. CASSIDY, M.D., Norwich, *Vice President*.

EDWIN C. CHIPMAN, M.D., New London, *Secretary and Treasurer*.

Councilor—EDWARD P. BREWER, M.D., Norwich.

Censors—RUSH W. KIMBALL, M.D., C. E. BRAYTON, M.D.,
F. N. BRAMAN, M.D.

Annual Meeting, First Thursday in April; Semi-Annual, First
Thursday in October.

Baltic:

James G. Burr.

Colchester:

Raymond R. Gandy.

East Lyme—NIANTIC:

Frederick H. Dart.

Edward Atkinson.

Griswold—JEWETT CITY:

George H. Jennings.

Alphonse Fontaine.

Robert R. Agnew.

Groton:

Edmund P. Douglass.

Frank W. Hewes.

NOANK:

William M. Hill.

Montville—UNCASVILLE:

Morton E. Fox.

New London:

Abiel W. Nelson.

FRANCIS N. BRAMAN

John G. Stanton.

Charles B. Graves.

Harold H. Heyer.

Carlisle F. Ferrin.

Thomas W. Rogers.

J. Clifton Taylor.

Harry M. Lee.

Emanuel A. Henkle.

Edwin C. Chipman.

Gurdon S. Allyn.

Daniel Sullivan.

Joseph M. Ganey.

James L. Harrington.

Ernest O. Winship.

William D. Cronin.

Henry A. Rogers.

Frank M. Dunn.

Stuart J. Lawson.

Norwich:

William Witter.

William S. C. Perkins.

Patrick Cassidy.

LEONARD B. ALMY.

Anthony Peck.

Edward P. Brewer.

Newton P. Smith.

Witter K. Tingley.

William T. Browne.

Rush W. Kimball.

James J. Donahue.

Harry E. Higgins.
 Charles H. Perkins.
 Patrick H. Harriman.
 Dennis J. Shahan.
 Patrick J. Cassidy.
 Edward J. Brophy.
 Leone F. LaPierre.
 William B. Casey.

TAFTVILLE:

George Thompson.

YANTIC:

Herbert H. Howe.

North Stonington:

Robert E. Harrington.

Stonington:

Charles E. Brayton.
 George D. Stanton.

MYSTIC:

Louis M. Allyn.

OLD MYSTIC:

William H. Gray.
 Albert T. Chapman.

Lyme:

Ellis K. Devitt.
 John L. Burnham.

Waterford:

George M. Minor.
 Total Number, 62.

FAIRFIELD COUNTY.

HERBERT E. SMYTH, M.D., Bridgeport, *President*.

WILLIAM L. GRISWOLD, M.D., Greenwich, *Vice President*.

FRANK W. STEVENS, M.D., Bridgeport, *Secretary*.

JAMES D. GOLD, M.D., Bridgeport, *Treasurer*.

Councilor—SAMUEL M. GARLICK, M.D., Bridgeport.

Censors—EDWARDS M. SMITH, M.D., DAVID C. BROWN, M.D.,
 SAMUEL PIERSON, M.D.

Annual Meeting, Second Tuesday in April, at Bridgeport;
 Semi-Annual, Second Tuesday in October.

Bridgeport:

Andrew J. Smith.....191 Barnum Avenue.
 GEORGE L. PORTER.....372 State Street.
 Robert Lauder310 Fairfield Avenue.
 N. E. WORDIN.....213 Courtland Street.
 F. M. Wilson.....834-836 Myrtle Avenue.
 F. B. Downs.....906 Lafayette Street.
 J. W. Wright.....808-810-812 Myrtle Avenue.
 Charles C. Godfrey.....340 State Street.
 S. M. Garlick.....474 State Street.

Henry Blodget.....	477 State Street.
J. C. Lynch.....	826 Myrtle Avenue.
C. C. Hoyt.....	1289 State Street.
G. W. Osborn.....	888 Broad Street.
J. R. Topping.....	349 Noble Avenue.
B. W. White.....	390 State Street.
Jacob May.....	816 North Avenue.
G. B. Cowell.....	409 Noble Avenue.
George E. Ober.....	391 Main Street.
D. C. DeWolfe.....	516 Fairfield Avenue.
Henry S. Miles.....	417 State Street.
Charles L. Banks.....	306 West Avenue.
Fessenden L. Day.....	477 State Street.
Edward Fitzgerald.....	526 East Washington Avenue.
George S. Ford.....	527 State Street.
Frank M. Tukey....	429 State Street.
William W. Gray.....	346 West Avenue.
James D. Gold.....	839 Myrtle Avenue.
Reuben A. Lockhart.....	760 Washington Avenue.
Harriet A. Thompson.....	695 Warren Street.
Frederick J. Adams.....	327 Fairfield Avenue.
W. J. A. O'Hara.....	361 Barnum Avenue.
David M. Trecartin.....	860 Park Avenue.
Harry W. Fleck.....	495 Fairfield Avenue.
Thomas L. Ellis.....	332 West Avenue.
Charles R. Townsend.....	446 State Street.
Herbert E. Smyth.....	376 John Street.
J. Murray Johnson.....	385 State Street.
Elmer F. Blank.....	387 Noble Avenue.
Irving L. Nettleton.....	385 Noble Avenue.
Edwards M. Smith.....	340 State Street.
Frank L. Smith.....	2178 Main Street.
David B. Wason.....	421 State Street.
Dorland Smith.....	834 Myrtle Avenue.
Frank W. Stevens.....	829 Myrtle Avenue.
George Howell Warner.....	863 Myrtle Avenue.
Daniel Michael Driscoll.....	467 State Street.
Chester E. Blackman.....	1119 Stratford Avenue.
George F. Sheedy.....	2059 Main Street.
Henry E. Waterhouse.....	430 State Street.
Robert J. Lynch.....	52 Courtland Street.
Charles J. Levery.....	469 State Street.
Philip W. Bill.....	534 Fairfield Avenue.
Albert J. Roberts.....	430 State Street.

F. Winthrop Pyle.....	808 Myrtle Avenue.
Eli B. Ives.....	561 State Street.
Frank H. Coops.....	411 State Street.
William C. Watson.....	446 Stratford Avenue.
Jacob W. Gerber.....	662 East Main Street.
Herman E. Schulz.....	475 State Street.
Nathan T. Pratt.....	1221 Stratford Avenue.
Charles N. Haskell.....	525 State Street.
Morris J. Greenstein.....	107 Benham Avenue.
Philip J. Curran.....	475 State Street.
Giovanni Formichelli.....	48 Walter Street.
James L. Sullivan.....	539 East Main Street.
Robert B. Keane.....	90 N. Washington Avenue.
William C. Bowers.....	336 State Street.
Charles W. Gardner.....	449 State Street.
Charles Harry Sprague.....	810 Myrtle Avenue.
David Cleveland Patterson.....	477 State Street.
Charles Reed Pratt.....	429 State Street.
George W. Hawley.....	871 Park Avenue.

Bethel:

A. E. Barber.
 • George DeWitt Wight.
 Charles R. Hart.

Danbury:

E. A. Stratton.
 W. S. Watson.
 D. Chester Brown.
 H. F. Brownlee.
 George E. Lemmer.
 Charles F. Craig, U. S. A.
 William F. Gordon.
 William T. Bronson.
 Richard M. English.
 Paul U. Sunderland.

Darien:

George H. Noxon.

NOROTON:

M. W. Robinson.
 Albert L. House.

Fairfield:

W. H. Donaldson.

GREENFIELD HILL:

M. V. B. Dunham.

GREENS FARMS:

David W. McFarland.

SOUTHPORT:

Joseph L. Hetzel.
 Albert E. Belisle.

Greenwich:

Frank Terry Brooks.
 Fritz C. Hyde.
 William L. Griswold.
 Alvin W. Klein.
 John A. Clarke.
 William Burke.
 Harriet Baker Hyde.
 Edward O. Parker.

RIVERSIDE:

Charles Smith.

Huntington—SHELTON :

GOULD A. SHELTON.
 William S. Randall.
 Francis I. Nettleton.
 W. M. Stockwell.

Monroe—STEPNEY :

SETH HILL.

New Canaan:

Clarence H. Scoville.
 Myre J. Brooks.
 Edmund J. O'Shaughnessy.
 Charles B. Keeler.

Norwalk:

James G. Gregory.
 R. L. Higgins.
 S. H. Huntington.
 William J. Tracey.
 Arthur R. Turner.
 Jesse M. Coburn.
 Walter Hitchcock.
 Ward S. Gregory.

SOUTH NORWALK :

C. G. Bohannon.
 Lauren M. Allen.
 Henry C. Sherer.
 Jean Dumortier.
 Francis E. Burnell.
 William H. Stowe.

EAST NORWALK :

Frederick B. Baker.
 Franklin G. Brown.

Redding:

Ernest H. Smith.

Ridgefield:

Russell W. Lowe.
 Howard P. Mansfield.
 William H. Allee.

Sound Beach:

Sarah E. Finch.

Stamford:

A. M. Hurlbut.
 Samuel Pierson.
 A. N. Phillips.
 F. Schavoir.
 William B. Treadway.
 Rosavelle G. Philip.
 George Sherrill.
 Watson E. Rice.
 George R. Hertzberg.
 John J. Cloonan.
 Dean Foster.
 Donald R. MacLean.
 Frank H. Barnes.
 John H. Staub.
 Richard L. Bohannon.
 John J. Ryle.
 John F. Harrison.
 J. Wait Avery.
 Gilbert T. Smith.
 Thomas J. Biggs.
 Ralph W. Crane.
 W. T. Godfrey.
 Charles L. Dichter.
 Walter L. Scofield.
 Edward Williamson.
 Samuel M. Shirk.
 Julius Nemoitin.
 Charles Havelock.
 B. Meade.

Stratford:

W. B. Cogswell.
 G. F. Lewis.
 D. Howland.

Weston—LYONS PLAINS :

F. Gorham.

Westport:

F. Powers.
 F. D. Ruland.
 L. H. Wheeler, U. S. A.
 J. M. Nolan.

Total Number, 168.

WINDHAM COUNTY.

GEORGE M. BURROUGHS, M.D., Danielson, *President*.

JAMES L. GARDNER, M.D., Central Village, *Vice President*.

J. HOBART EGBERT, M.D., Willimantic, *Secretary*.

Councilor—JOHN B. KENT, M.D., Putnam.

Censor—R. C. PAINE, M.D., Thompson.

Annual Meeting, Third Thursday in April.

Brooklyn—WAUREGAN :

A. H. Tanner.

Danielson:

RIENZI ROBINSON.

W. H. Judson.

James B. Shannon.

George M. Burroughs.

Joseph N. Perriault.

Killingly:

Ashael E. Darling.

George Barnes.

EAST KILLINGLY :

Charles E. Hill.

Moosup:

Charles N. Allen.

W. W. Adams.

Francis Downing.

CENTRAL VILLAGE :

James L. Gardner.

Plainfield:

Arthur A. Chase.

Pomfret:

S. B. OVERLOCK.

Putnam:

John B. Kent.

F. A. Morrell.

Omar LaRue.

Warren W. Foster.

Henry R. Lowe.

Marguerite J. Bullard.

Edward F. Perry.

Joseph N. Landry.

Thompson:

Robert C. Paine.

Windham:

F. E. Guild.

Willimantic:

Frederick Rogers.

T. R. Parker.

John Weldon.

R. C. White.

Laura H. Hills.

Joseph A. Girouard.

Clarence E. Simonds.

Owen O'Neil.

Charles H. Girard.

J. H. Egbert.

Louis I. Mason.

W. P. Stuart Keating.

Woodstock—EAST WOODSTOCK :

Charles C. Gildersleeve.

Total Number, 40.

LITCHFIELD COUNTY.

GEORGE H. WRIGHT, M.D., New Milford, *President*.

FRANK H. LEE, M.D., Canaan, *Vice President*.

FRANCIS S. SKIFF, M.D., Falls Village, *Secretary*.

Councilor—ELIAS PRATT, M.D., Torrington.

Censors—J. SWETT, M.D., A. J. BARKER, M.D., R. S. GOODWIN, M.D.

Annual Meeting, Fourth Tuesday in April; Semi-Annual, Second Tuesday in October.

Bethlehem:

Etta May Hadley-Judd.

Canaan—FALLS VILLAGE:

Albert E. Cobb.

Francis S. Skiff.

Cornwall—WEST CORNWALL:

Joseph Robinson.

Goshen:

J. H. North.

Litchfield:

J. T. Sedgwick.

John L. Buel.

Charles N. Warner.

Charles I. Page.

Nelson L. Deming.

Charles H. Turkington.

R. A. Marcy.

New Hartford:

Josiah Sweet.

New Milford:

George E. Staub.

George H. Wright.

B. E. Bostwick.

Norfolk:

John C. Kendall.

I. L. Hamant.

Lucius D. Bulkley.

Frederick S. Dennis.

Almon W. Pinney.

North Canaan—CANAAN:

Charles W. Camp.

Frank H. Lee.

John G. Adam.

Plymouth—TERRYVILLE:

W. W. Wellington.

A. V. Stoughton.

Roxbury:

Louis J. Pons.

LAKEVILLE:

William Bissell.

George H. Knight.

William B. Bissell.

Ernest R. Pike.

Sharon:

Clarence W. Bassett.

Jerome S. Chaffee.

Thomaston:

Robert Hazen.

Ralph S. Goodwin.

James H. Kane.

Torrington:

William L. Platt.

Thatcher S. Hanchett.

Elias Pratt.
 Jerome S. Bissell.
 James D. Hayes.
 Abram J. Barker.
 Charles H. Carlin.
 Sanford H. Wadhams.
 H. D. Moore.
 William J. Hogan.
 Timothy M. Ryan.
 Harry B. Hanchett.
 George Streit.

Washington:

Frederic W. Wersebe.

Watertown:

Ernest K. Loveland.

Winchester—WINSTED:

Edward L. Pratt.
 William S. Hulbert.
 Salmon G. Howd.
 David D. Reidy.
 Ernest R. Kelsey.

WEST WINSTED:

Edward H. Welch.
 William S. Richards.

Woodbury—HOTCHKISSVILLE:

William G. Reynolds.

Total Number, 60.

MIDDLESEX COUNTY.

M. W. PLUMSTEAD, M.D., East Haddam, *President*.

D. A. NOLAN, M.D., Middletown, *Vice President*.

A. B. COLEBURN, M.D., Middletown, *Secretary*.

Councilor—J. M. KENISTON, M.D., Middletown.

Censors—J. H. KINGMAN, M.D., M. C. HAZEN, M.D.,
 J. E. BAILEY, M.D.

Annual Meeting, Second Thursday in April; Semi-Annual, Second
 Thursday in October.

Chatham—MIDDLE HADDAM:

George N. Lawson.

EAST HAMPTON:

Albert Field.
 Frederick T. Fitch.

Chester:

Fred Sumner Smith.

Clinton:

David Austin Fox.

Cromwell:

Frank K. Hallock.
 Charles E. Bush.

Durham:

Charles E. Zink.

East Haddam:

M. W. Plumstead.

Essex:

Frederick Barton Bradeen.
 Charles C. Davis.

Haddam:

Miner C. Hazen.
Felix P. Chillingworth.

Middletown:

William E. Fisher.
Charles E. Stanley.
Henry S. Noble.
Michael D. Murphy.
John E. Bailey.
Arthur J. Campbell.
Arthur B. Coleburn.
J. Francis Calef.
John E. Loveland.
Kate C. Mead.
Daniel A. Nolan.
John H. Mountain.
Charles B. Young.
Jessie W. Fisher.
James T. Mitchell.
James Henry Kingman.
Thomas Patrick Walsh.
James Murphy.

James M. Keniston.
Lewis Maitland.
Louis R. Brown.
Henry G. Jarvis.

Old Saybrook:

Calista V. Luther.
Irwin Granniss.

Portland:

Cushman A. Sears.
Frank E. Potter.
Dennis L. Glynn.
Edward J. Lynch.
Charles B. Chedel.

Saybrook—DEEP RIVER:

Howard T. French.
Arthur M. Pratt.

Westbrook:

John W. Parker, Jr.

Total Number, 45.

TOLLAND COUNTY.

CYRUS E. PENDLETON, M.D., Hebron, *President*.

FRANCIS M. DICKINSON, M.D., Rockville, *Vice President*.

ELI P. FLINT, M.D., Rockville, *Secretary*.

Councilor—THOMAS F. ROCKWELL, M.D., Rockville.

Censors—FREDERICK W. WALSH, M.D., FREDERICK GILNACK,
FRANK L. SMITH.

Annual Meeting, Third Tuesday in April; Semi-Annual, Third
Tuesday in October.

Coventry:

Isaac P. Fiske.

SOUTH COVENTRY:

WILLIAM L. HIGGINS.

Ellington:

Edwin T. Davis.

Hebron:

Cyrus H. Pendleton.
Cyrus E. Pendleton.

Mansfield—MANSFIELD DEPOT:

Frederick E. Johnson.

MANSFIELD CENTER:

William E. Cramm.

Rockville:

Frederick Gilnack.

Thomas F. Rockwell.

Eli P. Flint.

Thomas F. O'Loughlin.

Frederick W. Walsh.

Wright B. Bean.

Francis M. Dickinson.

Somers:

Alonzo L. Hurd.

Stafford—STAFFORD SPRINGS:

CYRUS B. NEWTON.

Frank L. Smith.

James Stretch.

John P. Hanley.

Tolland:

Willard N. Simmons.

Total Number, 20.

OFFICERS OF THE CONNECTICUT STATE MEDICAL
SOCIETY FROM ITS ORGANIZATION IN 1792
TO THE PRESENT TIME.*

PRESIDENTS.

1792	Leverett Hubbard.	1876	Ashbel W. Barrows.
1794	Eneas Munson.	1877	Robert Hubbard.
1801	James Potter.	1878	Charles M. Carleton.
1803	Thomas Mosley.	1879	Alfred R. Goodrich.
1804	Jeremiah West.	1880	Gideon L. Platt.
1807	John R. Watrous.	1881	William Deming.
1812	Mason F. Cogswell.	1882	William G. Brownson.
1822	Thomas Hubbard.	1883	Elisha B. Nye.
1827	Eli Todd.	1884	Benjamin N. Comings.
1829	John S. Peters.	1885	Elijah C. Kinney.
1832	William Buel.	1886	Thomas H. Hills.
1834	Thomas Miner.	1887	Francis Bacon.
1837	Silas Fuller.	1888	George L. Porter.
1841	Elijah Middlebrook.	1889	Orlando Brown.
1843	Luther Ticknor.	1890	Melancthon Storrs.
1846	Archibald Welch.	1891	Charles A. Lindsley.
1849	George Sumner.	1892	Cyrus B. Newton.
1851	Rufus Blakeman.	1893	Francis D. Edgerton.
1853	Richard Warner.	1894	Francis N. Braman.
1854	William H. Cogswell.	1895	Seth Hill.
1856	Benjamin H. Catlin.	1896	Rienzi Robinson.
1858	Ashbel Woodward.	1897	Ralph S. Goodwin.
1861	Josiah G. Beckwith.	1898	Henry P. Stearns.
1863	Ebenezer K. Hunt.	1899	Charles S. Rodman.
1865	Nathan B. Ives.	1900	Leonard B. Almy.
1866	Isaac G. Porter.	1901	John H. Grannis.
1867	Charles Woodward.	1902	Gould A. Shelton.
1868	Samuel B. Beresford.	1903	Samuel B. St. John.
1869	Henry Bronson.	1904	William H. Carmalt.
1870	Charles F. Sumner.	1905	{ †Edward H. Welch.
1871	Gurdon W. Russell.	1905	{ Nathaniel E. Wordin.
1872	Henry W. Buel.	1906	William L. Higgins.
1873	Ira Hutchinson.	1907	Everett J. McKnight.
1874	Lowell Holbrook.	1908	Seldom B. Overlock.
1875	Pliny A. Jewett.	1909	Samuel D. Gilbert.

*Prepared for the Secretary by Dr. J. B. Lewis, Hartford.

†Resigned.

VICE PRESIDENTS.

1792	Eneas Munson.	1875	Ashbel W. Barrows.
1794	Elihu Tudor.	1876	Robert Hubbard.
1796	James Potter.	1877	Charles M. Carleton.
1801	Thomas Mosley.	1878	Alfred R. Goodrich.
1803	Jeremiah West.	1879	Gideon L. Platt.
1804	Jared Potter.	1880	William L. Deming.
1806	John R. Watrous.	1881	William G. Brownson.
1807	Mason F. Cogswell.	1882	Elisha B. Nye.
1812	John Barker.	1883	Benjamin N. Comings.
1813	Timothy Hall.	1884	Elijah C. Kinney.
1814	Thomas Hubbard.	1885	Samuel Hutchins.
1822	Eli Todd.	1886	Francis Bacon.
1824	Eli Ives.	1887	George L. Porter.
1827	John S. Peters.	1888	Orlando Brown.
1829	William Buel.	1889	Charles J. Fox.
1832	Thomas Miner.	1890	Charles A. Lindsley.
1834	Silas Fuller.	1891	Cyrus B. Newton.
1837	Elijah Middlebrook.	1892	Francis D. Edgerton.
1841	Luther Ticknor.	1893	Francis N. Braman.
1843	Archibald Welch.	1894	Seth Hill.
1846	Dyer T. Brainard.	1895	Rienzi Robinson.
1847	George Sumner.	1896	Ralph S. Goodwin.
1849	Rufus Blakeman.	1897	Henry P. Stearns.
1851	Richard Warner.	1898	Charles S. Rodman.
1853	William H. Cogswell.	1899	Leonard B. Almy.
1854	Benjamin H. Catlin.	1900	John H. Grannis.
1856	Ashbel Woodward.	1901	Gould A. Shelton.
1858	Josiah G. Beckwith.	1902	Samuel B. St. John.
1861	Ebenezer K. Hunt.	1903	William H. Carmalt.
1863	Nathan B. Ives.	1904	Edward H. Welch.
1865	Isaac G. Porter.	1905	{ Frederick A. Morrell.
1866	Charles Woodward.		{ Eli P. Flint.
1867	Samuel B. Beresford.	1906	{ Samuel D. Gilbert.
1868	Henry Bronson.		{ Charles E. Brayton.
1869	Charles F. Sumner.	1907	{ Franklin P. Clark.
1870	Gurdon W. Russell.		{ Miner C. Hazen.
1871	Henry W. Buel.	1908	{ Irving L. Hamant.
1872	Ira Hutchinson.		{ Walter L. Barber.
1873	Lowell Holbrook.	1909	{ Theodore R. Parker.
1874	Pliny A. Jewett.		{ William J. Tracey.

SECRETARIES.

1792	Jared Potter.	1838	Archibald Welch.
1794	James Clark.	1843	Ralph Farnsworth.
1796	Daniel Sheldon.	1844	Worthington Hooker.
1798	Nathaniel Perry.	1846	Gurdon W. Russell.
1800	Samuel Woodward.	1849	Josiah G. Beckwith.
1801	William Shelton.	1858	Panet M. Hastings.
1805	John Barker.	1862	Leonard J. Sanford.
1810	Eli Ives.	1864	Moses C. White.
1813	Joseph Foot.	1876	Charles W. Chamberlain.
1817	Jonathan Knight.	1883	Samuel B. St. John.
1827	Samuel B. Woodward.	1889	Nathaniel E. Wordin.
1830	George Sumner.	1905	Walter R. Steiner.
1832	Charles Hooker.		

TREASURERS.

1792	John Osborn.	1829	Joseph Palmer.
1793	Jeremiah West.	1834	Elijah Middlebrook.
1794	John Osborn.	1837	Luther Tichnor.
1796	Mason F. Cogswell.	1841	Virgil Maro Dow.
1800	William B. Hall.	1851	George O. Sumner.
1808	Timothy Hall.	1863	James C. Jackson.
1813	Richard Ely.	1876	Francis D. Edgerton.
1816	Thomas Miner.	1883	Erastus P. Swasey.
1817	John S. Peters.	1889	William W. Knight.
1827	William Buel.	1905	Joseph H. Townsend.

ALPHABETICAL LIST

OF THE

MEMBERS OF THE CONNECTICUT STATE MEDICAL SOCIETY,

With Date and Place of Graduation, and Post-Office Address.

In preparing this list the Secretary has followed the list in the Proceedings of 1892, made with great care and labor by Dr. J. B. Lewis for the Centennial year. It may be relied upon as being correct.

Abrams, Alva Elnathan.....	Albany, '81.....	Hartford.
Adam, John Geikie.....	Trinity, Tor., '00.....	North Canaan.
Adams, Frederick Joseph.....	Univ. N. Y., '95.....	Bridgeport.
Adams, Henry Ely.....	Yale, '02.....	Hartford.
Adams, William Waldo.....	Bellevue, '91.....	Moosup.
Agnew, Robert R.....	Yale, '08.....	Jewett City.
Alcorn, Thomas Grant.....	P. & S., Boston, '97....	Thompsonville.
Alcott, Ralph Waldo Emerson.....	U. S. Med. Coll., '81....	West Hartford.
Allee, William Hanford.....	P. & S., N. Y., '99.....	Ridgefield.
Allen, Charles Noah.....	Univ. Vt., '81.....	Moosup.
Allen, Howard Oliver.....	Univ. N. Y., '79.....	Broad Brook.
Allen, Lauren Melville.....	P. & S., N. Y., '80....	South Norwalk.
Allen, Millard Filmore.....	Med. Chi., Phila., '95....	New Haven.
Alling, Arthur Nathaniel, B.A., Yale, '86..	P. & S., N. Y., '91.....	New Haven.
Allyn, Gurdon Spicer.....	Univ. Pa., '03.....	New London.
Allyn, Louis Maxson.....	Univ. Pa., '93.....	Mystic.
Almy, Leonard Ballou, B.A., Yale, '73....	Bellevue, '76.....	Norwich.
Alton, Charles De Lancey.....	Bellevue, '75.....	Hartford.
Anderson, Arvid.....	Univ. Mich., '93.....	New Britain.
Anderson, Henry Gray.....	P. & S., N. Y., '89.....	Waterbury.
Arnold, Ernest Hermann.....	Yale, '94.....	New Haven.
Arnold, Harold Sears, B.A., Yale, '00....	Yale, '03.....	New Haven.
Atkinson, Edward.....	Univ. Vt., '93.....	Niantic.
Avery, John Waite.....	Univ. Vt., '97.....	Stamford.
Axtelle, John Franklin.....	L. I. Hosp. Coll., '71.....	Hartford.
Backus, Harold Simeon.....	L. I. Hosp. Coll., '03....	Broad Brook.
Bacon, Leonard Woolsey, B.A., Yale, '88..	Yale, '92.....	New Haven.
Bailey, George Cornelius.....	Univ. N. Y., '86.....	Hartford.
Bailey, John Elmore.....	P. & S., N. Y., '85.....	Middletown.
Bailey, Michael Angelo.....	P. & S., Balt., '93.....	Hartford.
Baker, Frederick Birdseye.....	Univ. Md., '88.....	East Norwalk.
Bangs, Dean Cleveland.....	Balt. Med. Coll., '02.....	Milford.
Banks, Charles Lincoln.....	P. & S., N. Y., '91.....	Bridgeport.

- Barber, Alvin Elizur.....Berkshire, '54.....Bethel.
 Barber, Walter Lewis.....Bellevue, '73.....Waterbury.
 Barher, Walter Lewis, Jr., Yale, '03.....N. Y. Univ. & Bellevue, '07, Waterbury.
 Barihault, Arthur Octave.....Vict. Med. Coll., '89.....New Haven.
 Barker, Ahram James.....Bellevue, '97.....Torrington.
 Barnes, Frank Hazelhurst.....N. Y. Hom. Med., '96.....Stamford.
 Barnes, George.....Univ. N. Y., '04.....Killingly.
 Barnes, Wm. Samuel, Ph.B., Yale, '95.....Yale, '97.....New Haven.
 Barnett, John Frederick.....Yale, '69.....West Haven.
 Barrett, William Joseph.....Md. Med., '04.....New Haven.
 Barrows, Benj. Safford, Ph.B., Yale, '83....Univ. N. Y., '87.....Hartford.
 Bartlett, Charles Joseph, B.A., Yale, '92;
 M.A., Yale, '94.....Yale, '95.....New Haven.
 Bartlett, William Bradford.....Harvard, '06.....Hartford.
 Bassett, Clarence Wheeler.....Univ. N. Y., '82.....Sharon.
 Beach, Charles Coffing, Ph.B., Yale, '77....P. & S., N. Y., '82.....Hartford.
 Beach, Charles Thomas.....Yale, '05.....Hartford.
 Beach, Edward Charles.....Yale, '88.....Milford.
 Bean, William Hill, Ph.B., Yale, '82.....Yale, '03.....New Haven.
 Bean, Wright Butler.....P. & S., N. Y., '95.....Rockville.
 Beck, Frederick George.....Yale, '03.....New Haven.
 Bedford, Alletta Langdon, A.B., Cornell....Cornell, '05.....Waterbury.
 Beebe, George Hoxie.....Univ. N. Y., '78.....Guilford.
 Belisle, Albert Edward.....Jefferson Med. Coll., '08....Southport.
 Bell, George Newton.....Yale, '92.....Hartford.
 Belloso, Frederick.....Yale, '72.....New Haven.
 Benedict, Frank Allen.....P. & S., N. Y., '87.....Seymour.
 Benedict, John Mitchell.....Univ. N. Y., '82.....Waterbury.
 Bercinsky, David.....Yale, '02.....New Haven.
 Bevans, Theodore Frank.....Univ. Minn., '03.....Waterbury.
 Bickford, Henry.....Penn. Eclectic Med., '68....Hartford.
 Biggs, Thomas Jacob.....Ohio Med., '87.....Stamford.
 Bill, Philip Worcester, Ph.B., Yale, '97....P. & S., N. Y., '01.....Bridgeport.
 Bishop, Frederic Courtney, B.A., Yale, '92. Yale, '95.....New Haven.
 Bishop, Louis Bennett, B.A., Yale, '86....Yale, '88.....New Haven.
 Bissell, Jerome Samuel.....Yale, '94.....Torrington.
 Bissell, William, B.A., Yale, '53.....Yale, '56.....Lakeville.
 Bissell, William Bascom, A.B., Yale, '88...P. & S., N. Y., '92.....Lakeville.
 Blackman, Chester Eugene.....L. I. Hosp. Coll., '97.....Bridgeport.
 Blair, Edward Holden.....P. & S., Balt., '06.....Hartford.
 Blake, Eugene Maurice.....Yale, '06.....New Haven.
 Blanchard, Irving DeLoss.....Yale, '97.....Hartford.
 Blank, Elmer Francis.....Starling, '97.....Bridgeport.
 Blodget, Henry, A.B., Yale, '75.....Bellevue, '81.....Bridgeport.
 Blumer, George.....Cooper Med. Coll., '90....New Haven.
 Bodley, George Houghton.....Yale Med. School, '07....New Britain.
 Bohannan, Charles Gordon.....Univ. N. Y., '78.....South Norwalk.
 Bohannan, Richard Lee.....Univ. N. Y., '74.....Stamford.
 Borden, Charles Herbert.....P. & S., N. Y., '96.....Hartford.
 Bostwick, Benjamin Earle.....L. I. Hosp. Coll., '90....New Milford.
 Botsford, Charles Porter.....Yale, '94.....Hartford.
 Boucher, James Joseph.....P. & S., Balt., '04.....Hartford.
 Boucher, John Bernard.....P. & S., Balt., '94.....Hartford.
 Bowers, William Cutler.....P. & S., N. Y., '77.....Bridgeport.
 Boynton, Frances Nichols.....Univ. Mich., '03.....New Haven.

- Brackett, Arthur Stone, B.A., Yale, '92....Jefferson, '95.....Bristol.
 Brackett, William Walker.....Jefferson, '96.....New Britain.
 Bradeen, Frederick Barton.....Univ. Pa., '99.....Essex.
 Bradley, Mark Spalding.....P. & S., N. Y., '92.....Hartford.
 Bradstreet, Edward Thomas, B.A., Yale, '74..P. & S., N. Y., '77.....Meriden.
 Brainard, Clifford Brewster, Ph.B., Yale, '94..Yale, '98.....Hartford.
 Braman, Francis Nelson.....Bellevue, '66.....New London.
 Brayton, Charles Erskine.....P. & S., N. Y., '73.....Stonington.
 Brennan, Huhert Daniel.....Univ. Vt., '92.....Bristol.
 Brennan, John E.....Georgetown, '05.....Waterbury.
 Brennan, Patrick J.....Yale, '07.....Waterbury.
 Brewer, Edward Pliny, Ph.D.....Dartmouth, '79.....Norwich.
 Bridge, John Law, B.S., Wesleyan, '88;
 Ph.D., Clark, '94.....Harvard, '03.....Thompsonville.
 Bronson, William Thaddeus.....Univ. N. Y., '98.....Danbury.
 Brooks, Frank Terry, B.A., Yale, '90.....L. I. Hosp. Coll., '93.....Greenwich.
 Brooks, Myre Joel.....Yale, '67.....New Canaan.
 Brophy, Edward Joseph.....Yale, '04.....Norwich.
 Brown, Charles Henry.....Univ. N. Y., '93.....Waterbury.
 Brown, David Chester.....Yale, '84.....Danbury.
 Brown, Franklin George.....L. I. Hosp. Coll., '95....East Norwalk.
 Brown, Louis Raymond, A.B., Tufts.....Tufts Med. Sch., '07.....Middletown.
 Browne, William Tyler, Ph.B., Yale, '78...Harvard, '82.....Norwich.
 Brownlee, Harris Fenton.....P. & S., N. Y., '88.....Danbury.
 Buel, John Laidlaw.....P. & S., N. Y., '88.....Litchfield.
 Buffum, John Harold.....Univ. Vt., '98.....Wallingford.
 Bulkeley, Lucius Duncan, A.B., Yale, '66;
 M.A.,P. & S., N. Y., '69.....Norfolk.
 Bull, John Norris.....P. & S., N. Y., '78.....Plainville.
 Bull, Thomas Marcus.....P. & S., N. Y., '87.....Naugatuck.
 Bullard, Marguerite Jane, A.B., Cornell, '02..Cornell Univ., '04.....Putnam.
 Bunce, Philip Dibble, A.B., Yale, '88.....P. & S., N. Y., '91.....Hartford.
 Burke, William.....L. I. Hosp. Coll., '96.....Greenwich.
 Burnell, Francis Edwin.....L. I. Hosp. Coll., '94..South Norwalk.
 Burnham, John Ladd.....Yale, '99.....Lyme.
 Burr, James Green.....Univ. Balt., '93.....Baltic.
 Burr, Noah Arthur.....Yale, '01.....South Manchester.
 Burroughs, George McClellan.....Balt. Med. Coll., '00.....Danielson.
 Bush, Charles Ellsworth.....Yale, '94.....Cromwell.
 Butler, William James.....L. I. Hosp. Coll., '95.....New Haven.

 Caldwell, William Elry.....Balt. Med. Coll., '95....West Suffield.
 Calef, Jeremiah Francis, B.A., Wesleyan, '77..Yale, '80.....Middletown.
 Camp, Charles Welford.....Univ. N. Y., '74.....Canaan.
 Campbell, Arthur Joseph.....P. & S., Balt., '85.....Middletown.
 Campbell, Sheldon Samuel Stratton.....Univ. Vt., '02.....Collinsville.
 Carlin, Charles Henry.....Univ. Mich., '96.....Torrington.
 Carmalt, William Henry, M.A., Yale, '81..P. & S., N. Y., '61.....New Haven.
 Carroll, John James.....Dartmouth, '97.....Naugatuck.
 Carver, John Preston.....Albany, '96.....Simsbury.
 Casey, William Bradford.....Univ. Md., '06.....Waterford.
 Cassidy, Louis F., Georgetown, '04.....Georgetown, '08.....Waterbury.
 Cassidy, Patrick.....Univ. Vt., '65.....Norwich.
 Cassidy, Patrick John, B.A., Yale, '94.....Johns Hopkins, '98.....Norwich.
 Castle, Frank Edwin.....Yale, '70.....Waterbury.

- Chaffee, Jerome Stuart, Ph.B., Yale, '94....Univ. Pa., '97.....Sharon.
 Chapman, Albert Taylor.....P. & S., N. Y., '64.....Old Mystic.
 Chase, Arthur Alverdo.....Harvard, '01.....Plainfield.
 Chatfield, Rollin Blackman.....Yale, '93.....Granby.
 Chedel, Charles Brigham, A.B., Dartmouth,
 '03.....Dartmouth, '06.....Portland.
 Cheney, Benjamin Austin, B.A., Yale, '88..Yale, '90.....New Haven.
 Chester, Thomas Weston, B.A., Rutgers, '92;
 M.A., '95.....P. & S., N. Y., '95.....Hartford.
 Chillingworth, Felix Percy.....Yale, '07.....Haddam.
 Chipman, Edwin Clifford, A.B., Alfred Univ.,
 '87.....P. & S., N. Y., '91.....New London.
 Clark, Robert Moses.....Univ. Pa., '91.....New Britain.
 Clarke, John Alexander.....Bellevue, '97.....Greenwich.
 Clary, George, A.B., Dartmouth, '52.....Yale, '57.....New Britain.
 Clifton, Harry Colman.....Univ. Pa., '01.....Hartford.
 Cloonan, John Joseph.....P. & S., Balt., '97.....Stamford.
 Coates, Frank Avery, A.B., Brown, '72;
 A.M., '75.....P. & S., N. Y., '75.....Mystic.
 Cobh, Albert Edward.....Yale, '98.....Falls Village.
 Coburn, Jessie Milton.....Boston Univ., '74.....Norwalk.
 Cochran, Levi Bennett.....Univ. Pa., '93.....Hartford.
 Cogswell, William Badger.....Bellevue, '81.....Stratford.
 Cohane, Jeremiah Joseph.....Yale, '98.....New Haven.
 Cohane, Timothy Francis.....Yale, '97.....New Haven.
 Coholan, Michael James.....Univ. N. Y., '65.....New Britain.
 Coleburn, Arthur Burr.....P. & S., N. Y., '90.....Middletown.
 Conklin, James Henry.....Univ. Vt., '99.....Hartford.
 Converse, George Frederick.....Yale, '87.....New Haven.
 Coogan, Joseph Albert.....Bellevue, '76.....Windsor Locks.
 Cook, Ansel Granville.....P. & S., N. Y., '87.....Hartford.
 Cooke, Joseph Anthony.....Yale, '97.....Meriden.
 Cooley, Myron Lynus.....Buffalo Univ., '86.....Waterbury.
 Cooper, Louis Edward, Ph.B., Yale, '84.....Yale, '86.....Ansonia.
 Coops, Frank Harvey, B.A., Dalhousie, '88..P. & S., Balt., '96.....Bridgeport.
 Cowan, Isabel.....Wom. Med. Coll., N. Y., '92, Waterbury.
 Cowell, George B.....P. & S., N. Y., '88.....Bridgeport.
 Cox, Ralph Benjamin.....McGill, '02.....Collinsville.
 Coyle, William Joseph.....Buffalo Univ., '85.....Windsor Locks.
 Craig, Charles Franklin.....Yale, '94.....Danbury.
 Cramm, William Edward.....Univ. Vt., '95.....Mansfield Center.
 Crane, Augustin Averill, B.A., Yale, '85....Yale, '87.....Waterbury.
 Crane, Ralph William.....Yale, '05.....Stamford.
 Crary, David, Jr.....Yale, '69.....Hartford.
 Cremin, Lawrence Michael.....Univ. N. Y., '81.....New Britain.
 Cronin, William Daniel.....P. & S., N. Y., '00.....New London.
 Crossfield, Frederick Solon.....Bellevue, '78.....Hartford.
 Crothers, Thomas Davison.....Albany, '65.....Hartford.
 Crowe, Willis Hanford.....P. & S., N. Y., '95.....New Haven.
 Curran, Philip John.....P. & S., N. Y., '01.....Bridgeport.
 Curtiss, William Martin Stanley.....Univ. Balt., '93.....Bristol.
 Darling, Ashael Ebenezer.....Harvard, '72.....Killingly.
 Dart, Frederick Howard.....P. & S., N. Y., '84.....Niantic.
 Davenport, Annabella Keith.....S. C. Med. Coll., '03....San Francisco.
 Davis, Charles Clarence.....Yale, '07.....Essex.

- Davis, Edwin Taylor.....Univ. Vt., '88.....Ellington.
 Davis, Elias Wyman, B.A., Yale, '80.....Yale, '92.....Seymour.
 Davis, Gustav Pierpont, B.A., Yale, '66....P. & S., N. Y., '69.....Hartford.
 Day, Fessenden Lorenzo, B.A., Bates, '90..Bellevue, '93.....Bridgeport.
 Deane, Henry AugustusDartmouth, '68.....South Windsor.
 DeBonis, Domenico.....Naples, '90.....Hartford.
 DeForest, Louis Shepard, B.A., Yale, '79;
 M.A., Yale, '91.....Univ. Jena, '85.....New Haven.
 Delaney, William Joseph.....McGill Univ., '87.....Naugatuck.
 Deming, Dudley Brainard, Ph.B., Yale, '97..P. & S., N. Y., '01.....Waterbury.
 Deming, Nelson L., Ph.B., Yale, '90.....P. & S., N. Y., '93.....Litchfield.
 Denne, Thomas Harman.....Vermont, '05.....Bloomfield.
 Dennis, Frederick Shepard, B.A., Yale, '72;
 M.R.C.S.Bellevue, '74.....Norfolk.
 Devitt, Ellis King.....Univ. Med. Coll., '07.....Lyme.
 DeWolfe, Daniel Charles.....Univ. Vt., '86.....Bridgeport.
 Dichter, Charles Levi.....Md. Med. Coll., '05.....Stamford.
 Dickerman, Wilton Elias, B.A., Amherst, '90..Yale, '93.....Hartford.
 Dickinson, Francis McLean, Ph.B.,
 Yale, '00.....P. & S., N. Y., '05.....Rockville.
 Diefendorf, Allen Ross, B.A., Yale, '94....Yale, '96.....New Haven.
 Dillon, John Henry.....Yale, '04.....Waterbury.
 Dole, Mary Phylinda, B.S., Mt. Holyoke, '89..Wom. Med. Coll., Balt., '88, New Haven.
 Donahue, Bartholomew Francis.....Yale Med. Sch., '03.....Wethersfield.
 Donahue, James Joseph.....P. & S., Balt., '96.....Norwich.
 Donahue, Michael Joseph.....Univ. Pa., '86Waterbury.
 Donaldson, William Henry.....Univ. N. Y., '81.....Fairfield.
 Donovan, Stephen.....P. & S., Balt., '02.....Derby.
 Douglass, Edmund Peaslee.....Univ. N. Y., '89.....Groton.
 Dowd, Michael Joseph.....Balt. Med. Coll., '01..Thompsonville.
 Dowling, John Francis.....L. I. Hosp. Coll., '90.....Hartford.
 Down, Edwin Augustus.....P. & S., N. Y., '87.....Hartford.
 Downs, Frederick Bradley.....Univ. N. Y., '78.....Bridgeport.
 Downing, Francis.....Balt. Med. Coll., '08.....Moosup.
 Driscoll, Daniel Michael.....P. & S., N. Y., '00.....Bridgeport.
 Dumortier, Jean.....Univ. Ghent, Belg., '89, South Norwalk.
 Dunham, Martin Van Buren.....Harvard, '67.....Greenfield Hill.
 Dunn, Frank Martin.....Balt. Med. Coll., '08.....New London.
 Dwyer, Patrick James, A.B., Fordham, '94..Univ. N. Y., '97.....Waterbury.
 Dwyer, Richard Joseph.....Jeff., Pa., '08.....Hartford.
 Eddy, George William.....Vermont, '04.....Collinsville.
 Edwards, Preston Mylraa, A.B., Atlanta
 Univ., '89.....Penn., '93.....Hartford.
 Egbert, Jay Hohart, A.B., A.M., Univ.
 ChicagoP. & S., N. Y., '97.....Willimantic.
 Eggleston, Jeremiah Dewey.....P. & S., N. Y., '79.....Meriden.
 Eliot, Gustavus, B.A., Yale, '77; A.M.,
 Yale, '82.....P. & S., N. Y., '80.....New Haven.
 Ellis, Thomas Long, B.A., Yale, '94.....Yale, '96.....Bridgeport.
 Elmer, Edward Oliver.....P. & S., Balt., '94.....Hartford.
 Elmes, Frank Atwater.....Yale, '05.....Derby.
 Emmet, Francis Arthur.....Yale, '02.....Hartford.
 Enders, Thomas Burnham, A.B., Yale, '88..P. & S., N. Y., '91.....Hartford.
 Engelke, Charles.....P. & S., N. Y., '02.....Waterbury.
 English, Richard Matthew.....Yale, '98.....Danbury.

- Farrell, John Edward.....Univ. N. Y., '03.....Waterbury.
 Felty, John Wellington, A.M., Emporia,
 Kan., '97.....Jefferson, '84.....Hartford.
 Fenn, Ava Hamlin.....P. & S., Balt., '86.....Meriden.
 Ferguson, George Dean.....Univ. N. Y., '79.....Thomaston.
 Ferrin, Carlisle Franklin, B.A., Univ.
 Vt., '91.....P. & S., N. Y., '95.....New London.
 Ferris, Harry Burr, B.A., Yale, '87.....Yale, '90.....New Haven.
 Field, AlbertL. I. Hosp. Coll., '67...East Hampton.
 Finch, George Terwilliger, B.A., Hohart, '75;
 M.A., Hohart, '78.....Bellevue, '77.....Thompsonville.
 Finch, Sarah Elizabeth.....Cornell, '04.....Sound Beach.
 Fisher, Jessie Weston.....Wom. Med. Coll., Pa., '93, Middletown.
 Fisher, William Edwin.....Univ. Pa., '76.....Middletown.
 Fiske, Isaac Parsons.....Univ. N. Y., '75.....Coventry.
 Fitch, Frederick Tracy.....Yale, '04.....East Hampton.
 Fitzgerald, Charles.....Univ. Vt., '98.....New Haven.
 Fitzgerald, Edward.....P. & S., Balt., '84.....Bridgeport.
 Fitzgerald, William Henry.....Univ. Vt., '95.....Hartford.
 Flaherty, Hugh Francis.....Yale Med. Sch., '07.....Hartford.
 Fleck, Harry Willard.....Jefferson, '96.....Bridgeport.
 Fleischner, Henry.....Yale, '78.....New Haven.
 Flint, Eli Percival.....Yale, '79.....Rockville.
 Flynn, James Henry Joseph.....Yale, '95.....New Haven.
 Fontaine, Alphonse.....Laval Univ., '92.....Jewett City.
 Foote, Charles Jenkins, B.A., Yale, '83.....Harvard, '87.....New Haven.
 Ford, Alice Porter.....Wom. Med. Coll., Pa., '04, New Haven.
 Ford, George Skiff.....Bellevue, '93.....Bridgeport.
 Formichelli, Giovanni.....Univ. Italy, '98.....Bridgeport.
 Foster, Dean, M.A., Univ. Kan.....Yale, '99.....Stamford.
 Foster, Warren Woden.....Harvard, '82.....Putnam.
 Fox, Charles James.....Univ. N. Y., '76.....Hartford.
 Fox, David Austin.....Univ. & Belle., '02.....Clinton.
 Fox, Edward Gager.....Univ. N. Y., '83.....Wethersfield.
 Fox, Morton Earl.....L. I. Hosp. Coll., '03.....Uncasville.
 French, Howard Truman.....P. & S., N. Y., '91.....Deep River.
 Freney, John Daniel.....L. I. Hosp. Coll., '93.....Waterbury.
 Froelich, Charles Edward, B.A.,
 Copenhagen, '64.....Copenhagen, '70.....Hartford.
 Fromen, Ernst Theodore.....Milwaukee Med. Coll., '97, New Britain.
 Frost, Charles Warren Lelah.....P. & S., N. Y., '80.....Waterbury.
 Fruin, John William.....L. I. Hosp. Coll., '08.....Waterbury.
 Fuller, Horace Smith, B.A., Amherst, '58;
 A.M., '61.....P. & S., N. Y., '65.....Hartford.
 Gailey, John Joseph.....Bowdoin, '98.....Waterbury.
 Galvin, William.....Univ. Vermont, '92.....Meriden.
 Gancher, Jacob.....L. I. Coll. Hosp., '06.....Waterbury.
 Gandy, Raymond Reeves.....Univ. Pa., '99.....Colchester.
 Ganey, Joseph Matthew.....P. & S., Balt., '04.....New London.
 Gardner, Charles Wesley.....Univ. Md., '01.....Bridgeport.
 Gardner, James Lester.....Univ. Vt., '81.....Central Village.
 Garlick, Samuel Middleton, B.A., Dart., '74.....Harvard, '77.....Bridgeport.
 Gaylord, Charles Woodward, B.A., Yale, '70.....Yale, '72.....Branford.
 Gerher, Jacob Wolf.....Univ. Md., '04.....Bridgeport.

- Gibbs, Joseph Addison.....P. & S., Chicago, '02.....Suffield.
 Gildersleeve, Charles Childs.....Yale, '96.....East Woodstock.
 Gill, Michael Henry.....Yale, '96.....Hartford.
 Gillam, William S.Univ. Pa., '88.....South Manchester.
 Gillin, Charles Adelbert.....Univ. N. Y., '83.....New Britain.
 Gilmore, Joseph Lee.....Yale, '04.....West Haven.
 Gilnack, Frederick.....P. & S., N. Y., '67.....Rockville.
 Girard, Charles Hermenigilde.....Victoria, '96.....Willimantic.
 Girouard, Joseph Arthur.....Balt. Med. Coll., '99.....Willimantic.
 Gladwin, Ellen Hammond.....Wom. Med. Coll., N. Y., '72, Hartford.
 Glynn, Dennis Lawrence.....Balt. Med. Coll., '02.....Portland.
 Godfrey, Charles Cartledge.....Dartmouth, '83.....Bridgeport.
 Godfrey, William Truitt.....Yale, '07.....Stamford.
 Gold, James Douglass, Ph.B., Yale, '88....P. & S., '91.....Bridgeport.
 Goldberg, Samuel J.....Yale, '07.....New Haven.
 Gompertz, Louis Michael.....Yale, '96.....New Haven.
 Goodenough, Edward Winchester, B.A.,
 Yale, '87.....Yale, '93.....Waterbury.
 Goodrich, Charles Augustus, B.S.,
 Mass. Ag. Coll., '93.....P. & S., N. Y., '96.....Hartford.
 Goodrich, William Alhert.....Med. Chi. Phila., '02.....Waterbury.
 Goodwin, Ralph Schuyler, Ph.B., Yale, '90..P. & S., N. Y., '93.....Thomaston.
 Goodyear, Robert Beardsley.....Yale, '68.....North Haven.
 Gordon, William Francis.....L. I. Hosp. Coll., '96.....Danbury.
 Gorham, FrankYale, '76.....Lyons Plains.
 Grady, James AloysiusGeorgetown Univ., '03.....Waterbury.
 Grannis, Irwin.....Yale, '96.....Old Saybrook.
 Grant, Arthur Sheldon, Wesleyan, '04....N. Y. Univ. & Bellevue, '08, Waterbury.
 Graves, Charles Burr, B.A., Yale, '82....Harvard, '86.....New London.
 Graves, Frederick George.....Yale, '92.....Waterbury.
 Gray, William Henry.....P. & S., N. Y., '89.....Old Mystic.
 Gray, William Wetmore, B.S., Dickinson, '85..Bellevue, '90.....Bridgeport.
 Greenstein, Morris Jacob.....Univ. South, '06.....Bridgeport.
 Gregory, James Glynn, B.A., Yale, '65....P. & S., N. Y., '68.....Norwalk.
 Gregory, Ward Slosson, Ph.B., Yale, '99....P. & S., N. Y., '03.....Norwalk.
 Griggs, John Bagg.....Yale, '97.....Hartford.
 Griswold, Arthur Heywood, A.B.,
 Harvard, '02.....Johns Hopkins, '06.....Hartford.
 Griswold, Frederick Pratt.....P. & S., N. Y., '76.....Meriden.
 Griswold, Julius Eghert.....Univ. N. Y., '79.....Newington.
 Griswold, William Loomis, Ph.B., Yale, '81..P. & S., N. Y., '85.....Greenwich.
 Guild, Frank Eugene.....L. I. Hosp. Coll., '85.....Windham.
 Hackett, John F., Yale '03.....McGill Med. Coll., '06.....Waterbury.
 Hadley-Judd, Etta May.....Wom. Med. Coll., Phila., '95, Bethlehem.
 Hall, Edward Dormanio.....Harvard, '73.....Meriden.
 Hall, Joseph Barnard.....Yale, '92.....Hartford.
 Hallock, Frank Kirkwood, A.B., Wesleyan,
 '82; A.M., '85.....P. & S., N. Y., '85.....Cromwell
 Hamant, Irving Louis.....L. I. Hosp. Coll., '90.....Norfolk.
 Hamilton, Charles Allen.....Univ. Vt., '86.....Waterbury.
 Hanchett, Harry Bigelow.....Jefferson, '05.....Torrington.
 Hanchett, Thatcher Swift.....Bellevue, '64.....Torrington.
 Hanley, John Patrick.....Cornell, '06.....Stafford Springs.
 Harriman, Patrick Henry.....Univ. N. Y., '84.....Norwich.
 Harrington, James Leon.....Jefferson, '03.....New London.

- Harrington, Robert Earl.....Balt. Med. Coll., '06.....N. Stonington.
 Harrison, John Francis.....Jefferson, '03.....Stamford.
 Hart, Charles Remington.....P. & S., N. Y., '59.....Bethel.
 Hartshorn, Willis Ellis, Ph.B., '95,
 Colo. Coll.Univ. Minn., '98.....New Haven.
 Haskell, Charles Nahum.....Univ. Vt., '90.....Bridgeport.
 Hatheway, Clarence Morris.....Bellevue, '03.....Hartford.
 Hawkes, William Whitney, B.A., Yale, '79.....Yale, '81.....New Haven.
 Hawley, George Walter.....Cornell, '99.....Bridgeport.
 Hayes, James Dermot, B.S., Manhattan
 Coll., N. Y.....Univ. N. Y., '94.....Torrington.
 Hayes, John Frances.....Univ. N. Y., '79.....Waterbury.
 Haylett, Howard Bulkley.....Vermont, '07.....Hartford.
 Hazen, Miner Comstock.....Univ. Mich., '55.....Haddam.
 Hazen, Robert, A.B., Univ. Vt., '96.....Univ. Vt., '98.....Thomaston.
 Healey, Thomas Francis.....L. I. Hosp. Coll., '08.....Waterbury.
 Henkle, Emmanuel Alexander.....Cornell, '99.....New London.
 Henze, Carl William.....Yale, '00.....New Haven.
 Hephurn, Thomas Norval, A.B., Randolph
 Macon, '00; A.M., '01.....Johns Hopkins, '05.....Hartford.
 Herbert, Archibald Cecil.....Univ. Va., '03.....New Haven.
 Hertzberg, George Robert.....Dartmouth, '99.....Stamford.
 Hessler, Herman Philip.....Yale, '03.....New Haven.
 Hetzel, Joseph Linn.....Bellevue, '91.....Southport.
 Heuhlein, Arthur Carl.....P. & S., N. Y., '02.....Hartford.
 Hewes, Frank William.....Univ. Vt., '94.....Groton.
 Heyer, Harold Hankinson.....Univ. N. Y., '87.....New London.
 Higgins, Gould Shelton.....Yale, '01.....North Haven.
 Higgins, Harry Eugene.....Univ. N. Y., '96.....Norwich.
 Higgins, Royal Lacey.....Bellevue, '67.....Norwalk.
 Higgins, William Lincoln.....Univ. N. Y., '90.....South Coventry.
 Hill, Charles Edwin, B.A., Yale, '76.....Harvard, '79.....East Killingly.
 Hill, Seth.....Yale, '66.....Stepney.
 Hill, William Martin.....Univ. Va., '97.....Noank.
 Hills, Laura Heath.....Wom. Med. Coll., Pa., '96, Willimantic.
 Hine, Henry Kingsley.....Md. Med., '08.....Waterbury.
 Hitchcock, Walter, Ph.B., Yale, '80.....P. & S., N. Y., '83.....Norwalk.
 Hodgson, Thomas Cady.....Toronto, '94.....East Berlin.
 Hogan, William John.....Yale, '98.....Torrington.
 Holbrook, Charles Werden, M.A.,
 Amherst, '93.....Yale, '96.....East Haven.
 Holroyd, Joseph Scripture.....P. & S., N. Y., '95.....Waterville.
 Horton, William Wickham.....Univ. N. Y., '79.....Bristol.
 Hotchkiss, Edward Alfred.....McGill, '04.....Hartford.
 Hotchkiss, Norton Royce.....Univ. Md., '91.....New Haven.
 Houghton, Simon Willard.....Bellevue, '79.....Hazardville.
 House, Albert Lewis.....Yale, '95.....Noroton.
 Howard, Arthur Wayland.....Univ. N. Y., '90.....Wethersfield.
 Howard, John.....Dartmouth, '81.....Hartford.
 Howd, Salmon Jennings.....Jefferson, '83.....Winsted.
 Howe, Harmon George.....Univ. Vt., '73, P. & S., N. Y., '75, Hartford.
 Howe, Herbert H.....Univ. Vt., '80.....Yantic.
 Howland, DeRuyter.....P. & S., N. Y., '06.....Stratford.
 Hoyt, Curtis Clark.....P. & S., N. Y., '87.....Bridgeport.
 Hoyt, Harold Eliphalet, A.B., Univ. Kansas. Alhany, '94.....Waterbury.

Hulbert, William Sharon.....Univ. N. Y., '80.....Winsted.
 Hungerford, Henry Edward.....Yale, '98.....Waterbury.
 Huntington, Samuel Henry.....Yale, '76.....Norwalk.
 Hupert, Julius, A.B., Univ. Lemberg.....Univ. Lemberg, '02.....New Britain.
 Hurd, Alonzo L., B.S., Me., '82.....Univ. Vt., '91.....Somers.
 Hurlbut, Augustin Moen, B.A., Yale, '76..P. & S., N. Y., '79.....Stamford.
 Hyde, Fritz Carleton.....Univ. Mich., '60.....Greenwich.
 Hyde, Harriet Baker.....Univ. Mich., '00.....Greenwich.
 Hynes, Thomas Vincent.....Yale, '00.....New Haven.

Ingalls, Pbineas Henry, A.B., Bowdoin, '77;

A.M., Bowdoin, '85.....P. & S., N. Y., '80.....Hartford.
 Irving, Samuel Wellington.....Yale, '91.....New Britain.
 Ives, Eli Butler.....Yale, '03.....Bridgeport.
 Ives, John Wagner.....Yale, '00.....Milford.

Jarvis, Henry Gildersleeve, A.B., Yale....Johns Hopkins, '10.....Middletown.
 Jennings, George Herman.....L. I. Hosp. Coll., '75.....Jewett City.
 Johnson, Edwin Hines.....Univ. Vt., '88.....Naugatuck.
 Johnson, Frederick Eugene.....Univ. N. Y., '79.....Mansfield.
 Johnson, John Murray.....L. I. Hosp. Coll., '95.....Bridgeport.
 Johnson, Marcus Morton, Pb.B., Brown, '70..Univ. N. Y., '77.....Hartford.
 Joslin, George Harvey.....Univ. Vt., '87.....Mt. Carmel.
 Judson, William Henry.....Jefferson, '78.....Danielson.

Kane, James Hugb.....Md. Med., Coll., '04.....Thomaston.
 Kane, Thomas Francis.....Bellevue, '87.....Hartford.
 Karrman, Edward William.....N. Y. Univ., '84.....Cbesbire.
 Keane, Robert Barnabas.....Bellevue, '03.....Bridgeport.
 Keating, Wm. Patrick Stuart.....Jefferson, '99.....Willimantic.
 Keeler, Charles B.....Hahn., Chicago, '88.....New Canaan.
 Keith, Albert Russell, A.B., Colby, '97....Harvard, '03.....Hartford.
 Kelsey, Ernest Russell.....Univ. Md., '01.....Winsted.
 Kellogg, Kennetb Everngbim.....P. & S., N. Y., '98.....New Britain.
 Kendall, John Calvin, B.A., Yale, '70.....P. & S., N. Y., '75.....Norfolk.
 Keniston, James Mortimer.....Harvard, '71.....Middletown.
 Kenna, William Mattbew, Pb.B., Yale, '90..Yale, '92.....New Haven.
 Kent, John Bryden.....Harvard, '60.....Putnam.
 Kilbourn, Clarence Leisbman.....Yale, '97.....New Haven.
 Kilbourn, Joseph Austin.....P. & S., Balt., '97.....Hartford.
 Kimball, Rusb Wilmot, A.B., Williams, '87..L. I. Hosp. Coll., '90.....Norwich.
 King, Howard Frost.....Albany, '99.....Windsor.
 Kingman, James Henry, A.B., Yale, '82....P. & S., N. Y., '85.....Middletown.
 Kingsbury, Isaac William, A.B.,
 Harvard, '96.....P. & S., N. Y., '03.....Hartford.

Kingsbury, William Sanford.....Yale, '96.....Glastonbury.
 Kirby, Frank Alonzo.....Columbian Univ., Wash., D. C., '95, New Haven.
 Klein, Alvin Walter.....Cin. Coll. Med. & Surg., '89, Greenwich.
 Knight, George Henry, A.M., Yale, '98....P. & S., N. Y., '86.....Lakeville.
 Knight, William Ward.....Univ. N. Y., '76.....Hartford.
 Kowalewski, Victor Alexander, B.A.,
 Yale, '99.....Yale, '02.....West Haven.

Lally, Thomas John.....Albany, '99.....Waterbury.
 Lamb, Chauncey Stafford.....Buffalo Univ., '93.....New Haven.

- Lambert, Benjamin Lott.....Univ. N. Y., '83.....New Haven.
 Lampson, Edward Rutledge, A.B.,
 Trinity, '91.....P. & S., N. Y., '96.....Hartford.
 Landry, Joseph Napoleon.....Laval, '01.....Putnam.
 Lane, Frederick Pollock.....Yale, '04.....New Haven.
 LaPierre, Leone Franklin.....Yale, '01.....Norwich.
 LaRue, Omer.....Vict., Montreal, '71.....Putnam.
 Lauder, Robert, M.A., Wesleyan, '89.....Yale, '71.....Bridgeport.
 Lawlor, Michael Joseph, Holy Cross, '02....P. & S., N. Y., '06.....Waterbury.
 Lawson, George Newton, B.A., Yale, '90....Yale, '92.....Middle Haddam.
 Lawson, Stuart Johnston.....Univ. Md., '05.....New London.
 Lawton, Frank Lyman, Ph.B., Yale, '90....Yale, '93.....Hartford.
 Lay, Walter Sidders.....Yale, '01.....Hamden.
 Lee, Frank Herbert.....Albany, '88.....Canaan.
 Lee, Harry Moore.....Columbia, '98.....New London.
 Lemmer, George Edward.....Bellevue, '85.....Danbury.
 Leverty, Charles Joseph.....N. Y. Univ. & Belle., '01....Bridgeport.
 Lewis, Dwight Milton, B.A., Yale, '97....Johns Hopkins, '01.....New Haven.
 Lewis, George Francis, B.A., '64.....Yale, '65.....Collinsville.
 Lewis, George Frederick, B.A., Trinity, '77..Yale, '84.....Stratford.
 Lewis, John Benjamin.....Univ. N. Y., '53.....Hartford.
 Lindsley, Charles Purdy, Ph.B., Yale, '75....Yale, '78.....New Haven.
 Littlejohn, Percy Duncan.....Yale, '97.....New Haven.
 Lockhart, Reuben Arthur.....Yale, '91.....Bridgeport.
 Loomis, Francis Newton, B.A., Yale, '81....Yale, '83.....Derby.
 Loveland, Ernest Kilburn.....Yale, '97.....Watertown.
 Loveland, John Elijah, A.B., Wesleyan, '89..Harvard, '92.....Middletown.
 Lowe, Henry Russell.....Dartmouth, '82.....Putnam.
 Lowe, Russell Walter.....Univ. N. Y., '89.....Ridgefield.
 Luby, John Francis, Ph.B., Yale, '76.....P. & S., N. Y., '78.....New Haven.
 Ludington, Nelson Amos.....Yale, '01.....New Haven.
 Lutber, Calista Vinton.....Wom. Med. Coll., Pa., '85, Old Saybrook.
 Lyman, David Russell.....Univ. Va., '99.....Wallingford.
 Lyman, Emmett J.....Yale, '07.....Stony Creek.
 Lynch, Edward James.....Univ. Pa., '09.....Portland.
 Lynch, John Charles.....Univ. N. Y., '86.....Bridgeport.
 Lynch, Robert Joseph.....Bellevue, '97.....Bridgeport.
 Lyon, Edwin Bradbury.....Berkshire, '62.....Hartford.
 Lyon, Treby Williams.....Yale, '98.....New Haven.

 MacLean, Donald Robert.....Balt. Med. Coll., '01.....Stamford.
 Maguire, Edward O'Reilly.....P. & S., N. Y., '98.....Derby.
 Maher, James Stephen, Ph.B., Yale, '92....Yale, '96.....New Haven.
 Maher, Stephen John.....Yale, '87.....New Haven.
 Mailhouse, Max, Ph.B., Yale, '76.....Yale, '78.....New Haven.
 Maitland, Lewis.....Univ. Pa., '95.....Middletown.
 Maloney, Daniel Joseph.....Univ. N. Y., '96.....Newbury.
 Maloney, Maurice Washington.....Jeff. Med. Coll., Phil., '97, New Britain.
 Mansfield, Howard Parker.....L. I. Hosp. Coll., '93.....Ridgefield.
 Mariani, Nicola.....Univ. Naples, '93.....New Haven.
 Marsh, Arthur Washburn.....Univ. Vt., '82.....New Haven.
 Martelle, Henry Augustus, A.B.,
 Bowdoin, '01.....Johns Hopkins, '05.....Hartford.
 Mason, Louis Irving.....P. & S., N. Y., '91.....Willimantic
 May, George William.....Milwaukee Med. Coll., '95, So. Manchester.

- May, Jacob Rush.....Chicago, '76.....Bridgeport.
 Mayberry, Franklin Hayden.....Univ. Vt., '85.....East Hartford.
 Mayer, Nathan.....Cincinnati, '57.....Hartford.
 McCabe, Edward Michael, B.A.,
 Manhattan, '83.....Yale, '87.....New Haven.
 McClellan, William Ernest.....Toronto, '04.....Hartford.
 McCook, John Butler.....P. & S., N. Y., '94.....Hartford.
 McDermott, Terrance Stephen.....Yale, '98.....New Haven.
 McDonald, Arthur Francis.....P. & S., N. Y., '05.....Waterbury.
 McDonnell, Ralph Augustine, B.A.,
 Yale, '90.....Yale, '92.....New Haven.
 McFarland, David Walter.....Univ. N. Y., '85.....Greens Farms.
 McGaughey, James David.....Jefferson, '70.....Wallingford.
 McIntosh, Edward Francis.....Yale, '97.....New Haven.
 McKee, Frederick Lyman.....P. & S., N. Y., '99.....Hartford.
 McKnight, Everett James, B.A., Yale, '76..P. & S., N. Y., '79.....Hartford.
 McLarney, Thomas Joseph.....P. & S., Balt., '97.....Waterbury.
 McNeil, Rollin.....Yale, '62.....New Haven.
 McPartland, Patrick Farrell.....Balt. Med. Coll., '05.....Hartford.
 McSweeney, Jeremiah Everett.....Vermont, '91.....Hartford.
 Mead, Kate Campbell.....Wom. Med. Coll., Pa., '88, Middletown.
 Meade, Charles Havelock Beverly.....Univ. of Louisville, '02.....Stamford.
 Meeks, Harold Alhert.....Bellevue, '90.....Meriden.
 Miles, Henry Shillingford, Ph.G., N. Y., '88..P. & S., N. Y., '91.....Bridgeport.
 Miller, George Root.....P. & S., Balt., '86.....Hartford.
 Miller, William Radley.....Albany, '98.....Southington.
 Minor, George Maynard.....L. I. Hosp. Coll., '85.....Waterford.
 Mitchell, James Thomas.....Univ. N. Y., '91.....Middletown.
 Molumphy, David James.....Jefferson, '06.....Hartford.
 Monagan, Charles Andrew, B.S.,
 Trinity, '93.....Univ. Pa., '98.....Waterbury.
 Monahan, David Henry, M.A.,
 Manhattan, '83.....Dartmouth, '00.....Bridgeport.
 Moody, Mary Blair.....Buffalo, '76.....New Haven.
 Moore, Howard Doolittle.....Bellevue, '97.....Torrington.
 Morgan, William Dennison, A.B.,
 Trinity, '72.....P. & S., N. Y., '76.....Hartford.
 Moriarty, James Ligouri.....Harvard, '96.....Waterbury.
 Morrell, Frederick Augustus.....L. I. Hosp. Coll., '85.....Putnam.
 Morrissey, Michael James.....P. & S., Balt., Md., '97.....Unionville.
 Moer, Orin Alexander.....Yale, '02.....Rocky Hill.
 Moulton, Edward Seymour, B.A.,
 Oherlin, '91.....Yale, '94.....New Haven.
 Mountain, John Henry.....Jefferson, '96.....Middletown.
 Munger, Carl Eugene, Ph.B., Yale, '80...P. & S., N. Y., '83.....Waterbury.
 Murphy, James.....Univ. Pa., '95.....Middletown.
 Murphy, John Aloysius.....N. Y. Univ., '97.....New Haven.
 Murphy, Michael Daniel.....Bellevue, '84.....Middletown.
 Murphy, Walter Graham.....Albany Med. Coll., '90..East Hartford.

 Nadler, Alfred Goldstein, B.A., Yale, '93....Yale, '96.....New Haven.
 Naylor, James Henry.....Univ. Vt., '95.....Hartford.
 Nelson, Abiel Ward.....Harvard, '61.....New London.
 Nemoitin, Julius.....P. & S., N. Y., '05.....Stamford.
 Nettleton, Francis Irving, Ph.B., Yale, '94..Yale, '97.....Shelton.

- Nettleton, Irving LaField.....L. I. Hosp. Coll., '98.....Bridgeport.
 Newton, Cyrus Brownlie.....Yale, '56.....Stafford Springs.
 Nickerson, Nehemiah.....N. Y. Med. Coll., '57.....Meriden.
 Nohle, Henry Smith, A.B., Tufts, '69;
 LL.D., Tufts, '05.....P. & S., N. Y., '71.....Middletown.
 Nolan, Daniel Andrew, Ph.G., Phil., '93....Med. Chir., Phila., '95....Middletown.
 Nolan, Jacob Matthew.....P. & S., Balt., '94.....Westport.
 North, Joseph Howard.....L. I. Hosp. Coll., '73.....Goshen.
 Noxon, George Henry.....Balt. Med. Coll., '93.....Darien.
 Oher, George Eugene.....Univ. Vt., '90.....Bridgeport.
 O'Connell, Timothy Grattan.....Yale Med Sch., '99.....Bristol.
 O'Connell, Thomas Smith.....P. & S., Balt., '92.....East Hartford.
 O'Connor, Matthew Charles, A.B., St.
 Francis X., N. Y., '69.....P. & S., N. Y., '73.....New Haven.
 O'Connor, Patrick Thomas.....Bellevue, '92.....Waterbury.
 O'Flaherty, Ellen Pemhroke.....Cornell, '01.....Hartford.
 O'Hara, Bernard Augustine.....Bellevue, '82.....Waterbury.
 O'Hara, William James Aloysius.....P. & S., Balt., '93.....Bridgeport.
 O'Laughlin, Thomas Francis.....Univ. N. Y., '96.....Rockville.
 O'Neil, Owen.....Jefferson, '04.....Willimantic.
 Oshorn, George Wakeman, B.A., Yale, '84..P. & S., N. Y., '87.....Bridgeport.
 Osborne, Oliver Thomas.....Yale, '84.....New Haven.
 O'Shaughnessy, Edmund Joseph.....Bellevue, '99.....New Canaan.
 Otis, Samuel Dickinson.....Univ. N. Y., '77.....Meriden.
 Outerson, Andrew Mansergh.....Jefferson Med. Soc., Phila., '06, Hartford.
 Outerson, Richard Ambrose.....Jefferson, '02.....Windsor Locks.
 Overlock, Seldom Burden, B.A., Colhy, '86..Bellevue, '89.....Pomfret.
 Owens, William Thomas.....Univ. Vt., '99.....Hartford.
 Page, Charles Ithamar.....P. & S., N. Y., '90.....Litchfield.
 Paine, Robert Child.....Dartmouth, '00.....Thompson.
 Park, Charles Edwin.....Yale, '81.....New Haven.
 Parker, Edward Oliver, A.B.,
 Harvard, '91.....P. & S., N. Y., '96.....Greenwich.
 Parker, John Woodcock.....Yale, '06.....Westbrook.
 Parker, Theodore Raymond.....Univ. N. Y., '80.....Willimantic.
 Parker, Thomas Edward.....Yale, '04.....Waterbury.
 Parlato, Michael A.....Yale, '08.....Derby.
 Parmelee, Edward Kibbe.....L. I. Hosp. Coll., '89.....Ansonia.
 Parmele, George Luther, D.M.D.,
 Harvard, '70.....L. I. Hosp. Coll., '69.....Hartford.
 Parsons, Edward Field, A.B., Williams, '48..P. & S., N. Y., '58.....Thompsonville.
 Patterson, David Cleveland.....P. & S., Balt., '06.....Bridgeport.
 Peck, Anthony, B.A., Hamilton, '72.....Univ. N. Y., '75.....Norwich.
 Peck, Robert Ellsworth, Ph.B., Yale, '90...Yale, '93.....New Haven.
 Peckham, Lucy Creemer.....Wom. Med. Coll., Pa., '85, New Haven.
 Pendleton, Cyrus Edmund.....Yale, '03.....Hebron.
 Pendleton, Cyrus Henry.....Western Reserve, '60.....Hebron.
 Perkins, Charles Harris.....P. & S., N. Y., '91.....Norwich.
 Perkins, William Sheldon Clark.....P. & S., N. Y., '60.....Norwich.
 Perrault, Joseph Napoleon.....Tufts, '01.....Danielson.
 Perry, Edward Franklin.....L. I. Hosp. Coll., '97.....Putnam.
 Phelps, Charles Dickinson, B.A.,
 Amherst, '89; M.A., Amherst, '97.....P. & S., N. Y., '95.....West Haven.
 Philip, Rosavelle Gardner.....Wom. Med. Coll., N. Y. Inf., '75, Stamford.

- Phillips, Alfred Noroton.....P. & S., N. Y., '83.....Stamford.
 Phillips, Frank Lyman.....Yale, '06.....New Haven.
 Pierce, Elhridge Worthington.....Univ. N. Y., '85.....Meriden.
 Pierson, John Corbin.....Tufts, '03.....Hartford.
 Pierson, Samuel.....P. & S., N. Y., '81.....Stamford.
 Pike, Ernest Reginald.....Univ. Mich., '98.....Lakeville.
 Pinney, Almon William.....Hahnemann Med. Coll., Phila., '00, Norfolk.
 Pinney, Royal Watson.....P. & S., N. Y., '88.....Derhy.
 Pitman, Edwin Parker, B.A.,
 Dartmouth, '86.....Dartmouth, '91.....New Haven.
 Platt, William Logan.....P. & S., N. Y., '81.....Torrington.
 Plummer, Paul.....Univ. Vt., '94.....Hartford.
 Plumstead, Matthew Woodhury.....Jefferson '87.....Middletown.
 Pomeroy, Nelson Asa.....P. & S., N. Y., '96.....Waterbury.
 Pons, Louis Jacques.....Univ. Vt., '85.....Roxbury.
 Porter, George Loring, B.A., Brown, '59.....Jefferson, '62.....Bridgeport.
 Porter, Isaac Napoleon, B.A., Lincoln
 Univ., '90.....Yale, '93.....New Haven.
 Porter, William, Jr.....Chicago Med. Coll., '81.....Hartford.
 Potter, Frank Edward.....P. & S., N. Y., '89.....Portland.
 Powers, Frederick.....P. & S., N. Y., '70.....Westport.
 Pratt, Arthur Milon.....Bellevue, '92.....Deep River.
 Pratt, Charles Reed.....Yale, '05.....Bridgeport.
 Pratt, Edward Loomis.....Univ. N. Y., '84.....Winsted.
 Pratt, Elias.....P. & S., N. Y., '87.....Torrington.
 Pratt, Nathan Tolles, A.B., Trinity, '94;
 M.A., '97.....Yale, '04.....Bridgeport.
 Purinton, Charles Oscar, Ph.B., Yale, '97..Yale, '00.....West Hartford.
 Purney, John.....Balt. Med. Coll., '06.....New Britain.
 Pyle, Francis Winthrop, A.B., Yale, '97....P. & S., N. Y., '02.....Bridgeport.
- Ramsay, Otto Gustaf, M.A., Yale, '01, Hon., Univ. Va., '90.....New Haven.
 Rand, Richard Foster, Ph.B., Yale, '95....Johns Hopkins, '00.....New Haven.
 Randall, William Sherman, Ph.B.,
 Yale, '83.....P. & S., N. Y., '86.....Shelton.
 Rankin, Charles Goodrich, A.B.,
 Williams, '84; A.M., '87.....Chicago Med. Coll., '86...Glastonbury.
 Reeks, Thomas Ehen.....Univ. Md., '01.....New Britain.
 Reidy, David Dillon.....Med. Chi., Phila., '99.....Winsted.
 Reilly, Francis Henry.....Yale, '97.....New Haven.
 Reilly, James Michael.....Yale, '78.....New Haven.
 Reilly, Walter Augustine.....Bellevue, '98.....Naugatuck.
 Reinert, Emil Gustav.....Balt. Med. Coll., '95.....Hartford.
 Reynolds, William George.....Yale, '97.....Hotchkissville.
 Rice, Watson Emmons.....Univ. Mich., '72.....Stamford.
 Richards, William Spencer.....Univ. N. Y., '89.....West Winsted.
 Rindge, Milo Pemher.....P. & S., Cleveland, '05.....Madison.
 Ring, Henry Wilson, A.B., Bowdoin, '79;
 M.A., Bowdoin, '82.....Me. Med. Coll., '81.....New Haven.
 Rising, Harry Breed.....Yale, '95.....South Glastonbury.
 Rising, Henry Martin.....Yale, '68.....South Glastonbury.
 Rohhins, Charles Henry.....Balt. Med. Coll., '95.....New Haven.
 Rohhins, George Orrin.....Yale, '79.....Waterbury.
 Rohhins, James Watson.....Bellevue, '80.....Naugatuck.
 Roberts, Alhert Joseph.....Harvard, '02.....Bridgeport.

- Roherts, Edward Kilbourne, Ph.B.,
 Yale, '78.....Yale, '80.....New Haven.
 Robinson, Joseph.....P. & S., N. Y., '98.....West Cornwall.
 Robinson, Myron Potter.....Yale, '95.....Windsor Locks.
 Robinson, Myron Winslow.....Berkshire, '60.....Noroton.
 Robinson, Paul Skiff, Ph.B. Yale, '89.....Yale, '91.....New Haven.
 Robinson, Rienzi.....L. I. Hosp. Coll., '69.....Danielson.
 Rockwell, Thomas Francis.....Univ. N. Y., '81.....Rockville.
 Rodman, Charles Shepard.....P. & S., N. Y., '68.....Waterbury.
 Rogers, Frederick.....Univ. N. Y., '63.....Willimantic.
 Rogers, Henry Alexander.....Bellevue, '86.....New London.
 Rogers, James Frederick.....Yale, '05.....New Haven.
 Rogers, Thomas Weaver.....P. & S., N. Y., '90.....New London.
 Ronayne, Frank Joseph.....Yale, '04.....West Hartford.
 Rooney, James Francis.....Balt. Med. Coll., '03.....Hartford.
 Root, Edward King.....Univ. N. Y., '79.....Hartford.
 Root, Joseph Edward, B.S., Boston
 Univ., '76.....P. & S., N. Y., '83.....Hartford.
 Rose, John Henry.....Univ. N. Y., '92.....Hartford.
 Rowley, Alfred Merriman.....Univ. Vt., '97.....Hartford.
 Rowley, John Carter.....Harvard, '06.....Hartford.
 Rowley, Robert Lee.....Yale, '03.....Hartford.
 Ruickoldt, Frederick Arthur.....Jena, '65.....New Haven.
 Ruland, Frederick Davis.....P. & S., N. Y., '89.....Westport.
 Russell, Edmund.....Univ. of Penn., '04.....Waterbury.
 Russell, George Washington.....Bellevue, '96.....Waterbury.
 Russell, Thomas Hubbard, Ph.B., Yale, '72..Yale, '75.....New Haven.
 Russell, William Spencer.....Yale, '80.....Wallingford.
 Ryan, Joseph Patrick.....P. & S., N. Y., '03.....Hartford.
 Ryan, Patrick Joseph.....Niagara, '98.....Hartford.
 Ryan, Timothy Mayher, A.B., Loyola Coll..Balt. Med., '02.....Torrington.
 Ryle, John Joseph, A.B. and B.S.,
 Villanova, '94.....Univ. Buffalo, '97.....Stamford.
- Sanford, Charles Edwin.....Yale, '06.....New Haven.
 Sanford, Leonard Cutler, B.A., Yale, 90..Yale, '93.....New Haven.
 Sanford, Ward Harding.....Balt. Med. Coll., '95.....New Haven.
 Schavoir, Frederick.....P. & S., Balt., '87.....Stamford.
 Schulz, Herman Samuel.....Hahnemann, '01 (Phil.)....Bridgeport.
 Scofield, Walter Lewis.....Univ. Vt., '07.....Stamford.
 Scoville, Clarence Henry.....Balt. Med. Coll., '92.....New Canaan.
 Sears, Cushman Allen.....Univ. N. Y., '62.....Portland.
 Seaver, Jay Wehber, B.A., Yale, '80;
 M.A., '93.....Yale, '85.....New Haven.
 Sedgwick, James Theodore.....Univ. N. Y., '85.....Litchfield.
 Segur, Gideon Cross.....P. & S., N. Y., '82.....Hartford.
 Selleck, Nathaniel.....Univ. N. Y., '89.....Danbury.
 Shahan, Dennis Joseph.....Univ. Vt., '85.....Norwich.
 Shannon, James Bernard.....Victoria, '89.....Danielson.
 Sharpe, Elmer Thomas.....Univ. N. Y., '95.....Derby.
 Sharpe, Harry Rahe.....Univ. Vt., '00.....Manchester.
 Sheedy, George Francis, Ph.B., Yale, '99..Yale, '02.....Bridgeport.
 Sheehan, William Joseph, B.S., Manhattan
 Coll., '92.....Yale, '95.....New Haven.
 Shelton, Gould Abijah, M.A., Yale, '91...Yale, '69.....Shelton.

- Sherer, Henry Clifford.....Univ. N. Y., '92.....South Norwalk.
 Sherrill, George.....P. & S., '91.....Stamford.
 Shirk, Samuel Martin.....Hahn, Phil., '97.....Stamford.
 Simmons, Willard Nelson.....Univ. Vt., '89.....Tolland.
 Simonds, Clarence Eugene.....Univ. N. Y., '97.....Willimantic.
 Simpson, Frederick Thomas, B.A., Yale, '79. Me. Med. Coll., '84.....Hartford.
 Skiff, Francis Sands.....Univ. N. Y., '88.....Falls Village.
 Skinner, Clarence Edward, LL.D.,
 Rutherford, N. C., '00.....Yale, '91.....New Haven.
 Slattery, Morris Dove.....Yale, '93.....New Haven.
 Sloan, Thomas George.....P. & S., N. Y., '99..South Manchester.
 Smith, Andrew Jackson.....P. & S., N. Y., '63.....Bridgeport.
 Smith, Charles.....L. I. Hosp. Coll., '90.....Riverside.
 Smith, Dorland, A.B., Yale, '96.....Yale, '99.....Bridgeport.
 Smith, Earl Terry.....Yale, '97.....Hartford.
 Smith, Edwards Montrose.....P. & S., N. Y., '82.....Bridgeport.
 Smith, Edward Weir, A.B., Yale, '78.....McGill, Mont., '82.....Meriden.
 Smith, Eghert Livingston.....Yale, '96.....Waterbury.
 Smith, Ernest Herman, A.B. Amherst, '85..P. & S., N. Y., '89.....Redding.
 Smith, Frank Lewis.....Univ. N. Y., '75.....Stafford Springs.
 Smith, Frank Llewellyn.....Alhany, '83.....Bridgeport.
 Smith, Frederick Sumner, B.A., Yale, '79..Yale, '82.....Chester.
 Smith, George Arthur, A.B., Yale, '03.....J. H. Med. Sch., '07.....Hartford.
 Smith, Gilbert Tyson.....Univ. of Med., '97.....Stamford.
 Smith, Henry Hubert.....Jefferson, '77.....New Haven.
 Smith, Herbert Eugene, Ph.B., Yale, '79..Univ. Pa., '82.....New Haven.
 Smith, Newton Phineas.....P. & S., N. Y., '82.....Norwich.
 Smith, Oliver Cotton.....L. I. Hosp. Coll., '83.....Hartford.
 Smyth, Herbert Edmund.....McGill Univ., '84.....Bridgeport.
 Sperry, Frederick Noyes.....Yale, '94.....New Haven.
 Spier, Seymour Leopold.....Yale, '04.....New Haven.
 Sprague, Charles Harry.....P. & S., N. Y., '04.....Bridgeport.
 Standish, Frank Billings.....Yale, '03.....New Haven.
 Standish, James Herbert.....Univ. N. Y., '95.....Hartford.
 Stanley, Charles Everett.....Univ. Pa., '76.....Middletown.
 Stanton, George Dallas.....Bellevue, '65.....Stonington.
 Stanton, John Gilman, B.A., Amherst, '70..Wurtzburg, '73.....New London.
 Starr, Robert Sythoss, B.A., Trinity, '97;
 M.A., '00.....P. & S., N. Y., '01.....Hartford.
 Stauh, George Edwards.....L. I. Hosp. Coll., '93.....New Milford.
 Stauh, John Howard.....L. I. Hosp. Coll., '99.....Stamford.
 Steadman, Willard George.....Bellevue, '74.....Southington.
 Steele, Henry Merriman, Ph.B., Yale, '94..Johns Hopkins, '02.....New Haven.
 Steiner, Walter Ralph, A.B., Yale, '92;
 M.A., Yale, '95.....Johns Hopkins, '98.....Hartford.
 Stern, Charles Seymour, A.B., C. C., N. Y..Bellevue, '91.....Hartford.
 Stetson, James Ebenezer.....Yale, '81.....New Haven.
 Stevens, Caroline North.....Tufts, '98.....Wallingford.
 Stevens, Frank William.....Yale, '00.....Bridgeport.
 Stockwell, William Myron.....Univ. Pa., '04.....Suffield.
 Stoll, Henry Farnum.....P. & S., N. Y., '02.....Hartford.
 Storrs, Eckley Raynor.....Jefferson, '90.....Hartford.
 Stoughton, Arthur Volney, B.A.,
 Pomona, Calif.....Univ. Ohio, '98.....Terryville.
 Stowe, William Harvey.....Yale, '88.....South Norwalk.

- Stratton, Edward Augustus.....Univ. N. Y., '83.....Danbury.
 Streit, George.....Yale, '01.....Torrington.
 Stretch, James.....Univ. Coll., Richmond, Va., '02, Stafford Springs.
 Strosser, Herman.....Univ. Berlin, '84.....New Britain.
 Sullivan, Daniel.....Univ. N. Y., '97.....New London.
 Sullivan, Daniel Francis, A.B., Niagara Univ., '89.....Niagara Univ., '91.....Hartford.
 Sullivan, James Lawrence.....P. & S., Balt., '01.....Bridgeport.
 Sullivan, John Francis, B.A., Yale, '90.....P. & S., N. Y., '94.....New Haven.
 Sullivan, Michael Joseph.....Cornell, '00.....Meriden.
 Sunderland, Paul Ulysses.....N. Y. Hom. Med., '94.....Danbury.
 Swain, Henry Lawrence.....Yale, '84.....New Haven.
 Swan, Horace Cheney.....Tufts, '03.....Hartford.
 Swasey, Erastus Perry.....P. & S., N. Y., '69.....New Britain.
 Swenson, Andrew Clay.....Yale, '02.....Waterbury.
 Swett, Josiah.....Univ. Vt., '78.....New Hartford.
 Swett, Paul Plummer.....Univ. N. Y., '04.....Hartford.
- Taft, Charles Ezra.....Harvard, '86.....Hartford.
 Tanner, Alfred Herbert.....Bellevue, '74.....Brooklyn.
 Taylor, John Clifton.....Univ. Mich., '91.....New London.
 Taylor, Maude Winifred.....Tufts, '05.....Hartford.
 Teele, Julia Ernestine, A.B., Tabor, '85.....Wom. Med. Coll., Pa., '88, New Haven.
 Tenney, Arthur John, Ph.B., Yale, '77.....Yale, '83.....Branford.
 Thibault, Louis Joseph.....Yale, '00.....Waterbury.
 Thompson, Emma Jane.....Wom. Med. Coll., N. Y. Inf., '96, Hartford.
 Thompson, George.....Me. Med. Coll., '89.....Taftville.
 Thompson, Harriet Adaline.....Wom. Med. Coll., Pa., '93, Bridgeport.
 Thompson, Whitefield Nelson.....Jefferson, '89.....Hartford.
 Tiffany, Frank Monroe, A.B., Amherst, '91.....Univ. Pa., '96.....Stamford.
 Tingley, Witter Kinney.....Bellevue, '86.....Norwich.
 Tinker, William Richard.....Univ. N. Y., '80.....South Manchester.
 Tolles, Burton Isaac, A.B., Yale, '01.....Yale, '04.....Ansonia.
 Topping, Jacob Reed.....Univ. N. Y., '82.....Bridgeport.
 Townsend, Charles Rodman.....Albany, '95.....Bridgeport.
 Townsend, Jos. Hendley, B.A., Yale, '85.....Yale, '87.....New Haven.
 Townshend, Raynham.....P. & S., N. Y., '05.....New Haven.
 Tracey, William Joseph.....Univ. N. Y., '89.....Norwalk.
 Tracy, Andrew William.....McGill, '73.....Meriden.
 Travis, Catherine Hutchison.....Johns Hopkins, '03.....New Britain.
 Treadway, William Buckingham.....Univ. Mich., '83.....Howard, R. I.
 Treat, William Howard.....Yale, '06.....Derby.
 Trecartin, David Munson.....Dartmouth, '94.....Bridgeport.
 Tuch, Morris.....Bellevue, '06.....Hartford.
 Tudor, Mary Starr.....Wom. Med. Coll., Pa., '93, South Windsor.
 Tukey, Frank Martin, B.A., Bowdoin, '91.....Harvard, '94.....Bridgeport.
 Turbert, Edward Joseph.....Balt. Med. Coll., '04.....Hartford.
 Turkington, Charles Henry, Ph.B. Yale, '03. Johns Hopkins, '07.....Litchfield.
 Turner, Arthur Robert, A.B., Amherst, '84.....Univ. Paris, '94.....Norwalk.
 Tuttle, Charles Alling, Ph.B., Yale, '88.....Yale, '90.....New Haven.
 Tyler, Heman Augustin, Jr.....Yale, '98.....Hartford.
- Vail, George Francis, B.S., Villanova, '98.....Univ. Pa., '02.....Hartford.
 VanStrander, William Harold.....Univ. Vt., '00.....Hartford.
 Variell, Arthur Davis.....Bowdoin, '94.....Waterbury.

- Varno, Henry George.....P. & S., Balt., '82.....Thompsonville.
 Verdi, William Francis.....Yale, '94.....New Haven.
- Wadhams, Sanford Hosea.....Yale, '96.....Torrington.
 Waite, Frank Louis.....Bellevue, '88.....Hartford.
 Walsh, Frederick William.....P. & S., Balt., '85.....Hartford.
 Walsh, Thomas Patrick.....Univ. Vt., '02.....Middletown.
 Ward, James Ward.....P. & S., Balt., '95.....Hartford.
 Warner, Charles Norton.....Jefferson, '96.....Litchfield.
 Warner, George Howell.....Yale, '97.....Bridgeport.
 Wason, David Boughton.....P. & S., N. Y., '00.....Bridgeport.
 Waterhouse, Henry Edwin.....P. & S., N. Y., '02.....Bridgeport.
 Waterman, Paul.....Cornell, '02.....Hartford.
 Waters, John Bradford.....Univ. Vt., '90.....Hartford.
 Watson, William Clark.....L. I. Hosp. Coll., '97.....Bridgeport.
 Watson, William Seymour.....L. I. Hosp. Coll., '87.....Danbury.
 Weidner, Calvin.....Univ. Ind., '93.....Hartford.
 Weir, Janet Marshall.....Queen's Univ., Kingston, Ont., '91, Hartford.
 Welch, Edward Huhhard.....Yale, '76.....West Winsted.
 Welch, George Kellogg.....P. & S., N. Y., '78.....Hartford.
 Welch, Harry Little, A.B., Yale, '94.....Yale, '97.....New Haven.
 Welch, Thomas Francis.....Georgetown, '04.....Hartford.
 Welch, William Collins.....Yale, '77.....New Haven.
 Weldon, John.....Univ. N. Y., '83.....Willimantic.
 Weldon, Thomas Henry.....Univ. N. Y., '83.....South Manchester.
 Wellington, William Winthrop.....Univ. Vt., '89.....Terryville.
 Wells, Ernest Alden, A.B., Yale, '97.....Johns Hopkins, '01.....Hartford.
 Wersehe, Frederick William.....Univ. N. Y., '98.....Washington.
 Whalen, Edward James.....Yale, '08.....Hartford.
 Wheatley, Louis Frederick.....Tufts, '03.....Meriden.
 Wheeler, Frank Henry, B.A., Yale, '80.....Yale, '82.....New Haven.
 Wheeler, Lewis Hawley.....Yale, '97.....Westport.
 Whipple, Benedict Nolasco.....Yale Med. Sch., '07.....Bristol.
 White, Benjamin Walker.....L. I. Hosp. Coll., '86.....Bridgeport.
 White, Robert Creighton.....Univ. Vt., '89.....Willimantic.
 Whiton, Francis Henry.....Dartmouth, '72.....Manchester.
 Whittemore, Edw. Lancaster, Ph.B.,
 Yale, '92.....Univ. Va., '94.....New Britain.
 Whittemore, Edward Reed, A.B., Yale, '98.....P. & S., N. Y., '02.....New Haven.
 Whittemore, Frank Hamilton.....Bellevue, '74.....New Haven.
 Wiedman, Otto George.....Univ. Pa., '05.....Hartford.
 Wight, George DeWitt.....Bellevue, '87.....Bethel.
 Willard, Frederick Buell, A.B., Univ.
 Vt., '97.....Univ. Vt., '00.....Hartford.
 Williams, Allen Hamilton, A.B.,
 Harvard, '91.....Harvard, '01.....Hartford.
 Williams, Marian Walker, A.B.,
 Radcliffe, '97.....Johns Hopkins, '01.....Hartford.
 Williamson, Edward.....Bellevue, '86.....Stamford.
 Wilmot, Louis Howard.....Univ. N. Y., '91.....Ansonia.
 Wilson, Frederick Morse, A.B., Colby, '71.....Harvard, '75.....Bridgeport.
 Wilson, James Cornelius.....Univ. Vt., '04.....Hartford.
 Wilson, William Patrick.....P. & S., Balt., '90.....Wallingford.
 Winchell, Alverd Ezra, A.B., Wesleyan, '57.....P. & S., N. Y., '65.....New Haven.
 Winne, William Nelson.....N. Y. Univ., '97.....New Haven.







